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PAPER TRADE JOURNAL

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Vol. LXXXV, No. 4 JULY 28, 1927 Per annum $4.00 Per Copy 10 Cents

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PROMPT AND FUTURE

JOHANESON, WALES & SPARRE, Inc.

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250 PARK AVENUE (Cor. 46th Street) NEW YORK

TELEPHONE: VANDERBILT 1396 CABLE ADDRESS: GOODPULP

Rolling Agathon Enduro Stainless Iron into Sheets

A New Metal That Defeats Rust

EACH year rust and corrosion take their toll in metal parts of paper making machinery. Each year machinery shows increasing signs of age due to the injurious effects of water and solutions. If those metal parts were made of Agathon Enduro Stainless Iron, machinery would last longer and depreciation losses would be stopped. For Enduro Stainless Iron resists rust, scaling and corrosion indefinitely. It is not a coated metal, but possesses the same qualities all the way through.

Agathon Enduro Stainless Iron is easily worked—easily machined, forged or drawn—and yet possesses a hardness that resists wear and abrasion.

Our metallurgists will gladly assist you in the application of this remarkable metal to your product.

AGATHON ENDURO STAINLESS

Agathon Enduro Stainless can be—Spun, Forged, Welded, Riveted, Machined, Cold Worked.

Agathon Enduro Stainless resists—Abrasion, Alkali Solutions, Moist or Sea Air, Superheated Steam, Fruit and Vegetable Acids, and will not scale at High Temperatures.

Central Alloy Steel Corporation, Massillon, Ohio

World's Largest and Most Highly Specialized Alloy Steel Producers

Makers of Agathon Alloy Steels

Cleveland Syracuse San Francisco Detroit Philadelphia Chicago Los Angeles New York Tulsa St. Louis Seattle Cincinnati

AGATHON ENDURO STAINLESS IRON

Entered as second class matter August 13, 1925, at the Post Office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. ESTABLISHED 1872 FIFTY-SIXTH YEAR Published every Thursday by the Lockwood Trade Journal Co., at 34 N. Crystal St., E. Stroudsburg, Pa. EXECUTIVE AND EDITORIAL OFFICES: 10 EAST 39th STREET, NEW YORK CITY. CHICAGO: 123 West Madison Street, Chicago, Ill.

Heating Control Panel

Just wanted to tell you that 10 of the prominent paper manufacturers and their subsidiaries in North America are on our list of large users of KONDU THREADLESS FITTINGS.

We recently shipped an order of 11,955 THREADLESS FITTINGS to be installed in a large mill in Canada.

We are now working on several large orders for paper mills in the United States. Our fittings were put to severe tests and passed with highest approval. Result—Orders like this one.

We will be glad to give you detailed information.

Write for it.

Erie Malleable Iron Company

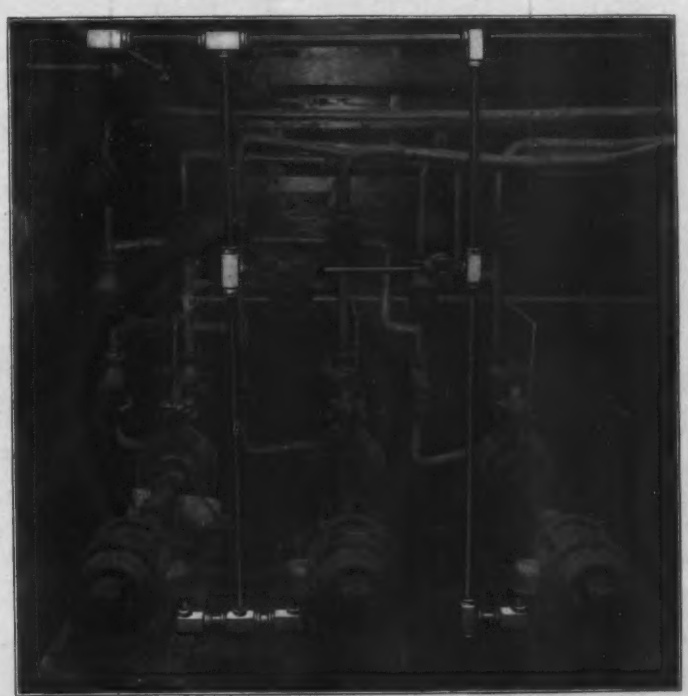
Kondu Division, Erie, Pennsylvania

Every Paper Mill Superintendent Should Have A Copy of Our Catalog.

—

Write for It, Also Sample Fitting. Free.

Acid Pumps



THE FAMOUS
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Wet Machines &
Drying Machines

100 tons dry Sulphite or Sulphate or 50 tons Ground Wood per 24 hours. Over fifty per-cent AIR-DRY.

Enormous savings in labour, felts, wires, general upkeep, floor space, steam, power, fibre, etc. Full information on request.

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FARREL CALENDERS

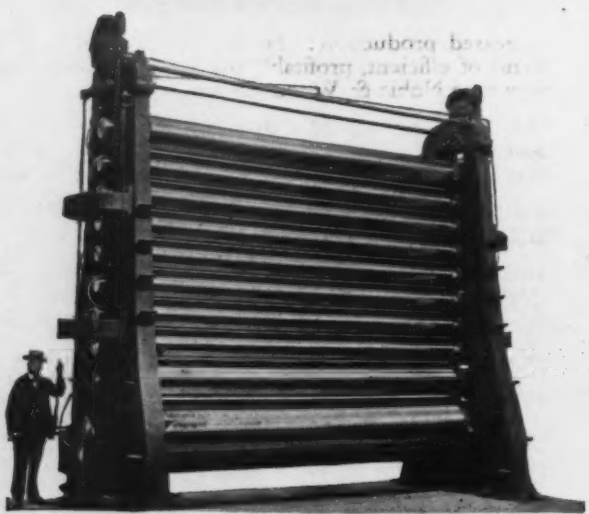
are made with

HYDRAULIC, ELECTRIC

or

RATCHET LIFT

all operated from the floor.



178" Stack with Hydraulic Lift

FARREL CALENDER ROLLS

are made in all sizes, as large as

264" FACE.

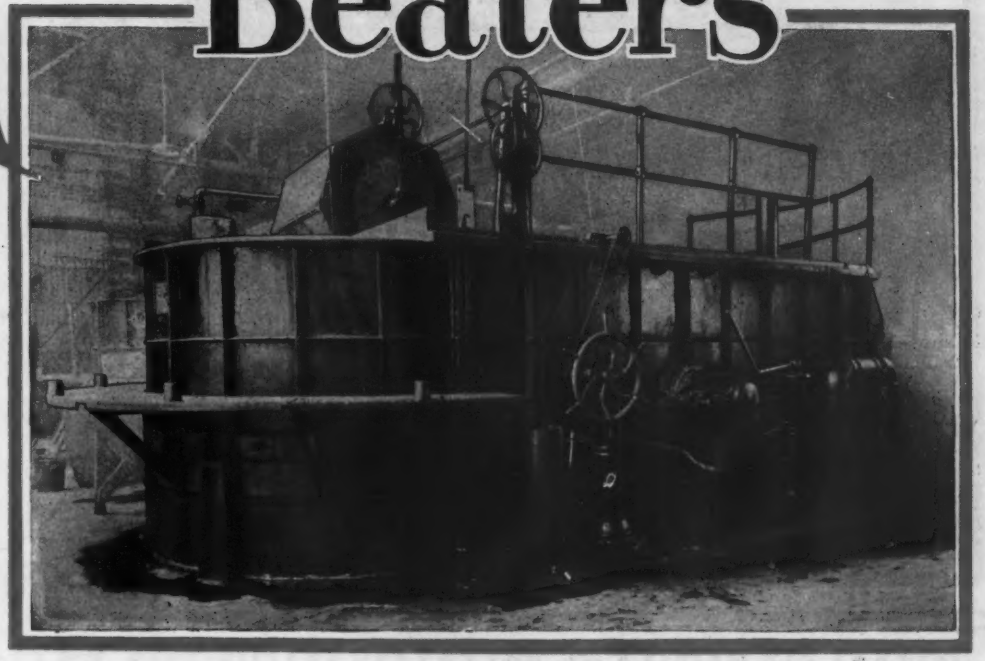
FARREL NEW TYPE ROLL GRINDER is noted for its ACCURACY

FARREL FOUNDRY AND MACHINE CO.

Established 1848

ANSONIA, CONN.

Rebuilt Beaters



for Greater Production, Better Paper, Lower Costs

Increased production! Higher quality! Reduced costs and overhead! The trend of efficient, profitable paper making takes immense strides through two new type Noble & Wood Beaters.

One,—a mammoth high density beater of over two tons capacity, for big production in minimized floor space. The other,—a smaller, fast circulating beater that speeds up production, lowers costs and permits full diversity of output.

Actual mill records with two high density beaters show a net increase of 1300 lbs. an hour, or 15.6 tons finished paper in a 24 hour day.

Three rebuilt beaters of the fast circulating type increased production from 1600 to 2500 lbs. per beater, and reduced beating time from 2 to 1½ hours;—an output equivalent to that of five standard type machines they displaced.

Your present beaters can be rebuilt to either of these modern types in 12 to 15 days, with no increase of floor space. In most cases it is possible to use the original tub, roll, bedplate and stand.

If your present output is limited through insufficient beater capacity, write us. Our engineers will gladly show you the way to greater and more economical production.

NOBLE & WOOD MACHINE COMPANY

Hoosick Falls New York

Established 1819

CHARLES LENNIG & CO., Inc.

Aluminum Sulfate

Commercial and Iron Free

Specially made for the Paper Industry

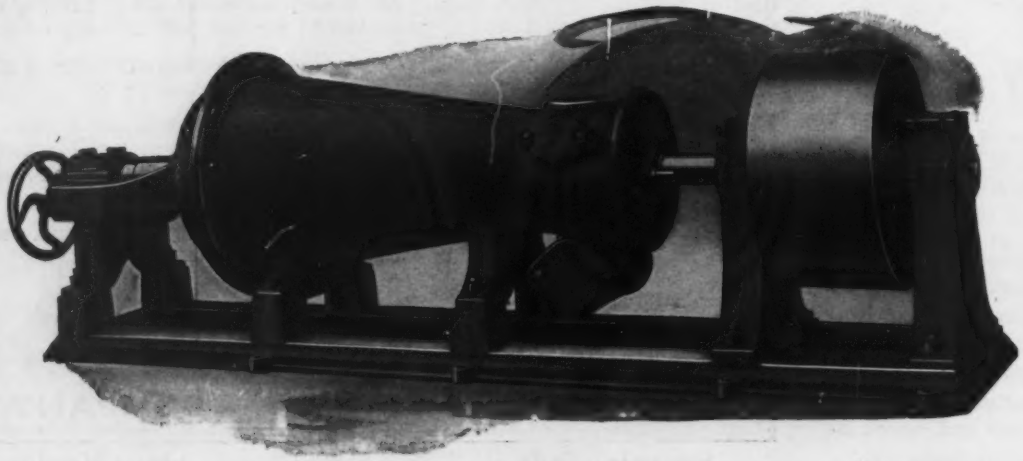
Office:
222 West Washington Square, Phila., Pa.

Works:
Bridesburg, Philadelphia, Pa.

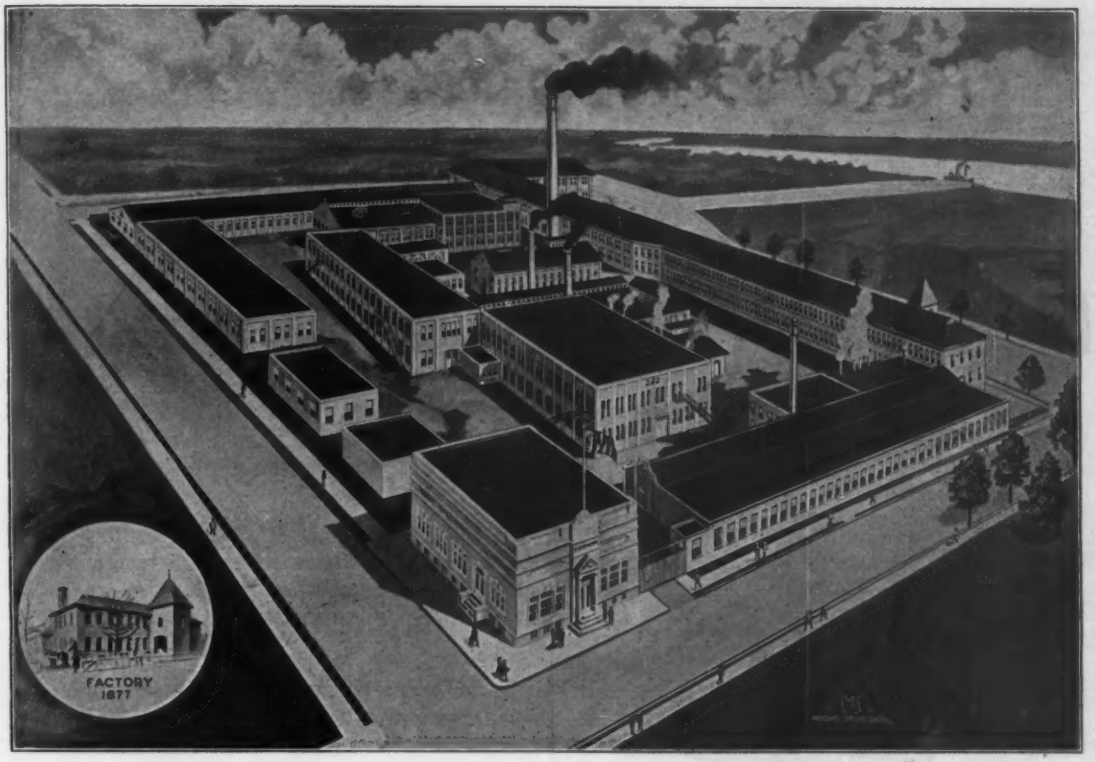
THE SMITH & WINCHESTER MFG. CO.

SOUTH WINDHAM, CONN.

PAPER MILL MACHINERY **MACHINE BUILDERS** PAPER BAG MACHINERY



NO. 60 JORDAN ENGINE



This Illustration Visualizes Fifty Years of Progressive Growth and Unsurpassed Achievements in the Production of

EASTWOOD

FOURDRINIER-CYLINDER-WASHER

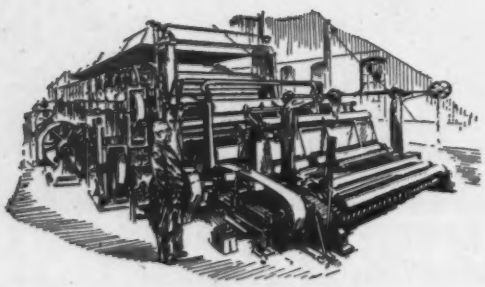
WIRES

EASTWOOD WIRE MANUFACTURING CO., BELLEVILLE N.J. U.S.A.

SHORT STORIES OF EXPERIENCES IN IMPORTANT PAPER MILLS

ONE MILL'S RECORD OF

Less "broke"
Reduced power consumption
Lower oil costs



⋆ Chapter I ⋆

Calling in the experts . . .

In the summer of 1924 a well-known Pennsylvania paper mill decided to benefit by an experienced analysis of their lubrication. The Vacuum Oil Company was given the opportunity to discover any faulty lubrication, and to recommend correct lubrication for the entire mill.

⋆ Chapter II ⋆

Conditions as found . . .

In our study of each piece of equipment conditions were noted as follows:

Paper Machine: Operated at high temperature. Largely hand-oiled. Much oil wasted. Lubrication not uniform. Power consumption high.

Back Drive: Much waste oil on floor and about pedestal. Cone-drive bearings were of old type. A better application of a high-grade lubricant would make the old-type bearings equivalent to the most modern.

Calender Stacks: Hand-oiled. Need here for more sparing and uniform application of high-grade lubricant.

Wet End: Excessive water. Special lubricant required of a character which would lubricate the bearing in the presence of water.

⋆ Chapter III ⋆

Lubrication as recommended

Gargoyle D.T.E. Oil Extra Heavy: Recommended for dryer bearings, beaters, Jordans, wood-pulp grinders and water-wheel bearings. We knew that this heavy-bodied, rich lubricating oil, when correctly applied would protect the heavy-duty bearings, reduce power consumption and lower oil consumption.

Gargoyle Etna Oil Heavy Medium: Recommended for the bearings with normal require-

ments. Experience had taught us that this oil stayed in bearings and adhered to shafts longer than the general run of machine oils.

Gargoyle Voco Engine Oil No. 1: Recommended for the wet end of the paper machines. The characteristic of this lubricant to assimilate with water and not be washed away, made it the logical recommendation.

Gargoyle D.T.E. Oil Light: Recommended for the high-speed, close-fitting bearings of a number of 300 h.p. and 75 h.p. electric motors.

To meet the steam condition found in this particular mill the correct grade of Gargoyle Cylinder Oil was recommended for steam-cylinder lubrication.

✲ Chapter IV ✲

Results as recorded . . .

About a year after Gargoyle lubricants had been applied according to our recommendations, as agreed upon by the mill operating officials, a check-up of improvements was made.

Improvement 1. Cleanliness of machines and floor with proportionate reduction in fire hazard.

Improvement 2. Power saving. An electric motor, formerly needed to help drive the paper machine was eliminated. With Gargoyle lubricants in service the entire load was carried by a steam engine with ease, due to decreased friction in the paper machine.

Improvement 3. Reduced cost of lubricants. This was estimated as less than half of previous cost.

Improvement 4. Reduced wear upon machine parts. Former creaking of gears and bearings practically eliminated.

Improvement 5. Reduced "broke." The Superintendent of the mill reported it was not uncommon to operate 24, 36 and 48 hours without a single break in the paper. Fewer paper-machine interruptions during the year. Free-running parts and more regular speeds shown in operating records.

A good example to follow . . .

17 of the 18 foremost builders of pulp and paper mill equipment recommend our oils.

Correct lubrication of a paper mill is a complicated problem. No one engineer can be expected to keep ahead of this problem singlehanded.

The Vacuum Oil Company will gladly bring its long experience to bear on the correct lubrication of your mill from grinders to slitters and winders.

✲ ✲

NOTE: We will gladly send your operating staff copies of our authoritative treatises, "Pulp and Paper Mill Lubrication," and "Bottle Oilers."

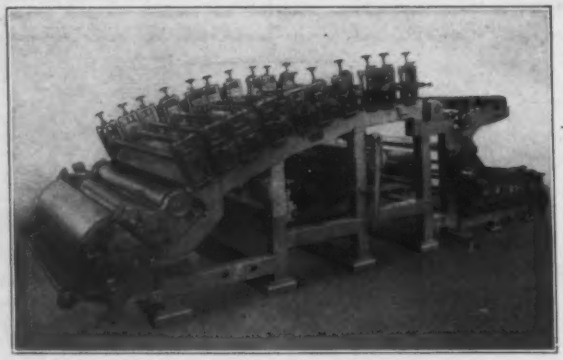
Vacuum Oil Company

Headquarters: 61 BROADWAY, NEW YORK

Branches and distributing warehouses throughout the country

Lubricating Oils

A grade for each type of service



NEW WALDRON

Arched Bed Coating Machine

Affording all the advantages of the cylinder machine plus the ability to take all the brushes necessary for high speeds—in excess of present established inclined bed machine practices.

This new Waldron coating machine incorporates a straight line brush motion with an arched bed and improved drives to better handle wide goods at a high speed. The undue stresses and vibrations in running wide goods at high speed are eliminated by the extra heavy construction of the machine throughout. The usual trouble due to slack edge and wrinkling of goods has been overcome by the arched surface in conjunction with the many other major improvements in Drives, Rolls, Bearings, Adjustments and Lubrication. Where operating speed in addition to smooth coating is a requirement, the specifications and performance records of the Arched Bed Coater merit prompt investigation.

Waldron Machines For

Embossing & Printing
Winders, Slitters, Reels
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Sizing and Coating
Wall Paper Machinery
Sand Paper Machinery

Specialists in Designing, Fabricating and Installing Complete Factory Layouts for Floor Covering, Wall Paper and Coated Paper.

JOHN WALDRON CORPORATION

Main Office and Works—NEW BRUNSWICK, N. J.

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Before Buying Equipment!

—know what you are going to get; know its design and construction; know that it will give you longer years of uninterrupted service. You get this and more from Manitowoc Equipment because:

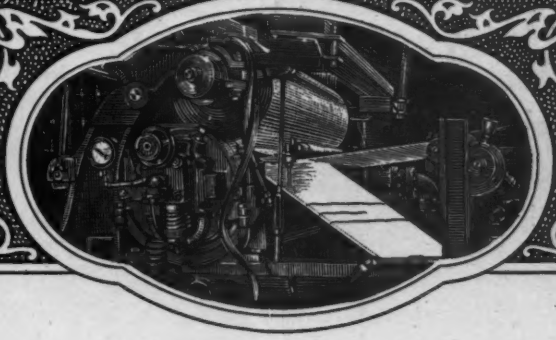
1. **Only the best grade of materials is used.**
2. **Highest class of workmanship is maintained throughout.**
3. **All pieces are precision-made.**
4. **Heavily and durably constructed.**
5. **All equipment is built for longer life.**

Our experience of over a quarter century in designing and building Digesters, Incinerators, Disc Evaporators, Refiners, Barking Drums, Blow Pipes, Globe and Cylindrical Rotaries, Rod Mills and other equipment, is your guarantee of satisfaction.

Write us today about your requirements.

Manitowoc Engineering Works
MANITOWOC, WISCONSIN

MANITOWOC



From New York to San Francisco

IN a normal lifetime, a felt will ordinarily travel a thousand miles more than the entire distance between New York and San Francisco. And every time it passes between the nip of the Press Rolls, it is subjected to a pressure of thousands of pounds.

To withstand such gruelling wear requires strength and stamina of the highest order.

At the same time if the felt is going to do its job of removing water with freedom from breaks, low steam consumption, low dryer felt costs, and less down time for washing, it has to be as porous as a fish net.

To combine these qualities, inherently opposed to each other as they are, is the trick of making felts. And, it's a matter of experience.

In back of Hamilton Felts is the experience of three generations of felt making. It is this experience that dictates the mixture of the wool, the construction of the warp and woof, the method of carding, of combing, and all the other operations entering into the making of a felt.

But to know Hamilton Felts, you've got to try them, to run them on your own machines and under your own mill conditions. The records of the machines will soon demonstrate that there are just felts and Hamilton Felts.

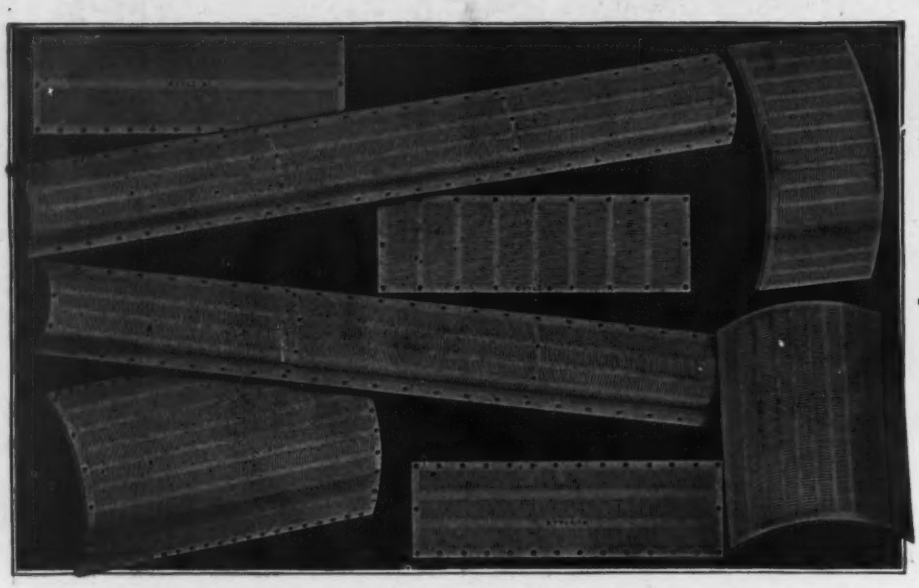
Ask the Hamilton Felt Man to specify the kind of felt you ought to use. He'll give you the one that will more than meet your requirements.

Shuler & Benninghofen, Hamilton, Ohio

The Miami Woolen Mills - Established 1858.

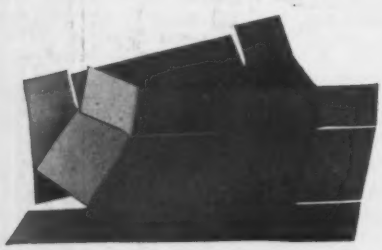
Hamilton Felts

WILLIAM A. HARDY & SONS CO.



FITCHBURG, MASSACHUSETTS, U. S. A.

Paper Makers *and* Paper Shippers



CARTONS can be ordered in the flat, die-cut and scored, ready for assembling, and STITCHING MACHINES INSTALLED TO ASSEMBLE CARTONS AS NEEDED. The cost of cartons *in the flat* is lower, the freight is less, and the storage space greatly reduced when handled in this manner.

One Operator Can Stitch Up to 1,000 Containers Per Day

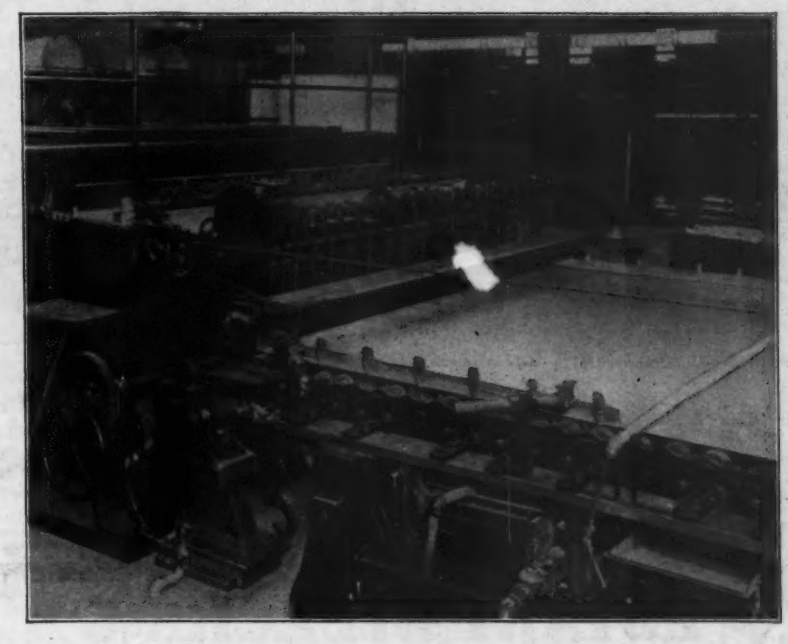
2 Flat Blanks—
A Morrison "Perfection" Stitcher—
and You Have a Complete Telescope Container!

WRITE NEAREST OFFICE FOR DETAILED INFORMATION

THE J. L. MORRISON COMPANY, INC.

General Offices and Factory: NIAGARA FALLS, N. Y.

424 West 33rd Street—NEW YORK CITY 116 West Harrison Street—CHICAGO 445 King Street, West—TORONTO, CANADA



Tried and Proven on Every Kind of Paper

A FEW USERS

Champion Coated Paper Company, Hamilton, Ohio
P. H. Glatfelter Company, Spring Grove, Pa.
Bogalusa Paper Company, Bogalusa, La.
Rolland Paper Company, Mont Rolland, Quebec
Smith Paper Company, Lee, Mass.
Ryegate Paper Company, East Ryegate, Vt.
Itasca Paper Company, Grand Rapids, Minn.
Central Paper Company, Muskegon, Mich.
Great Western Paper Company, Ladysmith, Wisc.

More than a score of mills have demonstrated to their own satisfaction the advantage of eliminating the bothersome deckle straps, of longer life to wires, and of a sheet of paper from two to three inches wider.

They have demonstrated these advantages on book, bond, writing, kraft, straw wrapping, news, glassine, and even toilet tissue.

Why not let us tell you the complete story of the Wentz No-Deckle Device. The only obligation is the one you owe yourself not to miss an opportunity to improve quality and increase profits.

A FEW MORE

Scott Paper Company, Chester, Pa.
Hummel & Ross, Hopewell, Va.
Champion International Company, Lawrence, Mass.
Brown Paper Mill Co., Inc., West Monroe, La.
Hartford City Paper Co., Hartford City, Ind.
Albemarle Paper Mfg. Co., Richmond, Va.
Mead Pulp & Paper Co., Chillicothe, Ohio
Waterway Paper Products Company, Chicago, Ill.
Hunde and Dauch Company, Fort Madison, Iowa

THE BLACK-CLAWSON COMPANY

Established 1873

HAMILTON, OHIO

Export Offices: 15 Park Row, New York City

Builders of highest quality paper and pulp mill machinery. Patentees and sole builders of Vertical Dryers and Champion Fourdriniers.

BLACK-CLAWSON

"NO DECKLE" DEVICE

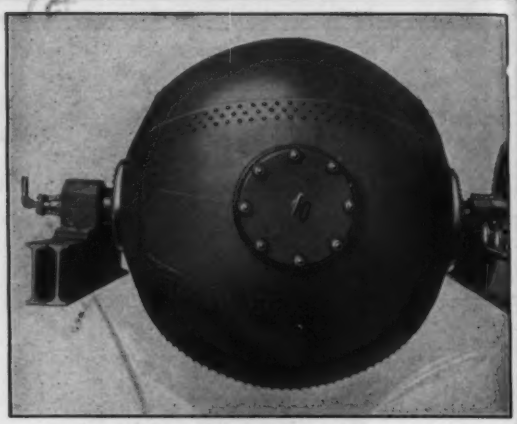
Built with Machine-Tool Accuracy

Fast, Economical Bleaching Now an Established Fact

JUST one experience with the new Biggs Rotary Cold Bleaching Engine is enough to show experienced paper men how much bleaching time and expense a Biggs can save.

In power required, chemicals consumed and density handled, the improved Biggs challenges comparison with any other bleaching method.

Its uniform results and all-around efficiency effectively back up Biggs forty year reputation for consistently good paper mill equipment.



The New and Improved Biggs Rotary Bleaching Engine (Patents Pending)

THE BIGGS BOILER WORKS COMPANY

Chicago Office: 35 South Dearborn Street
Eastern Sales Office: 300 Madison Avenue, New York City
General Offices and Works: Seneca Place and Case Avenue, Akron, O.

The Biggs Boiler Works Co. Akron Ohio Est. 1887

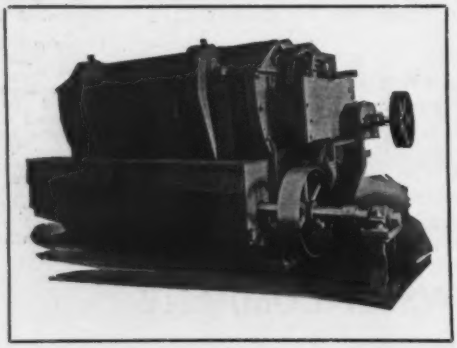
Trade Mark Registered

GLOBE and CYLINDER

ROTARY BLEACHING BOILERS

for Years of Dependable Cooking and Bleaching

1885



"MOORE & WHITE" ROTARY SCREEN

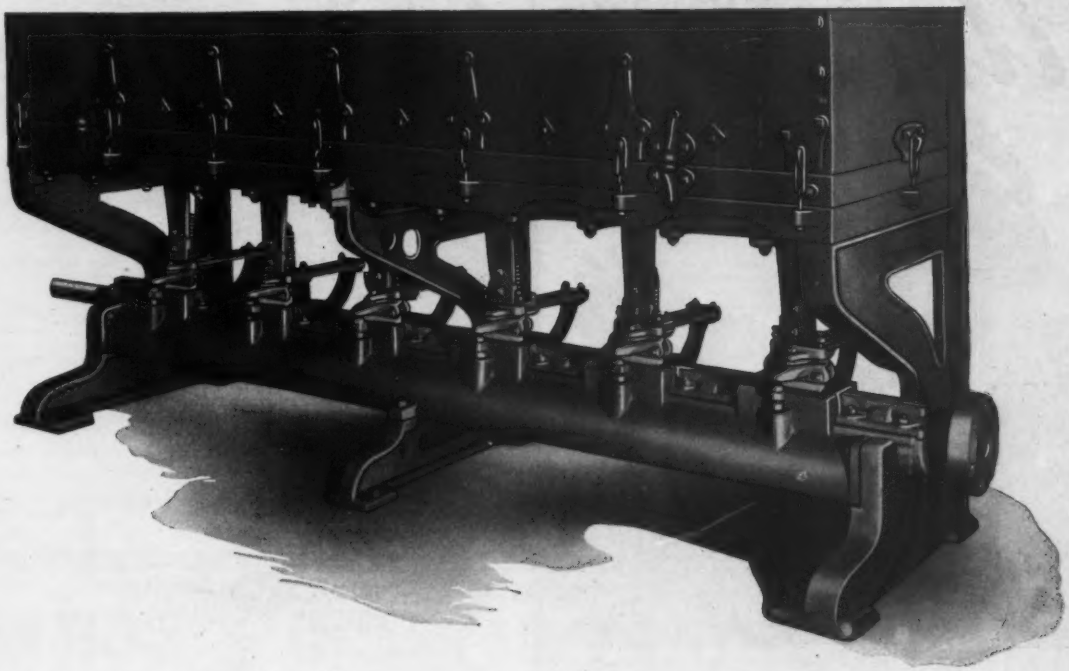
"Moore & White" Screens produce quality paper whether used on Tissues, Kraft, Roofing Manilas or Book Paper. Lumps and slime spots are eliminated. Breaks on paper are thus prevented and continuous operation is assured.

TONNAGE
CLEANLINESS
ECONOMY

THE MOORE & WHITE CO.
PHILADELPHIA, U. S. A.

CATALOG ON REQUEST

1927



The Appleton Flat Screen

For Clean Pulp

THAT is what the Appleton Flat Screen is built for. It is built of fewer parts which accounts for its accuracy and efficiency in operation, and for the small delay for cleaning and repairs. It is smooth-running and quiet. It is easily cleaned, the screen vat being clamped to the frame underneath in such a way as to permit the raising of the vat readily for cleaning. Its dams are easily adjusted so that with a minmum of experimentation the point on the Appleton Screen that is 'just right' is easily found.

Simple in design, economical in operation, and highly efficient in its results the Appleton Flat Screen produces clean pulp.

Send for descriptive bulletin

THE APPLETON MACHINE COMPANY
APPLETON, WISCONSIN

THE FINISHING TOUCH IN THE PREPARATION OF THE PULP

Uncle Jake says—

"There never was anything made but that someone could make it worse and sell it for less."

Consumer KVP Satisfaction

KALAMAZOO VEGETABLE PARCHMENT CO. KALAMAZOO, MICH.

IN ALL LINES

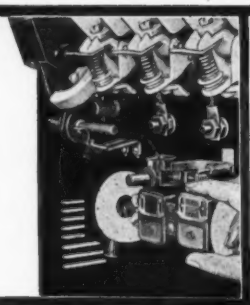
THERE IS ALWAYS A BEST IN PAPERMAKERS FELTS

TENAX IS THE BEST

Made Only By

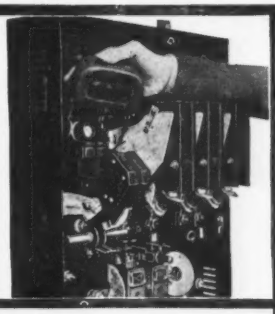
LOCKPORT FELT CO.

TENAX—THE LAST WORD IN FELTS **NEWFANE, N. Y.**



1 *Thermal Overload Protection. Cuts motor from line only when heating of motor windings becomes dangerous. Easily reset from outside of case.*

2 *Overload relay easily adjustable to insure maximum output from motor without danger to windings.*

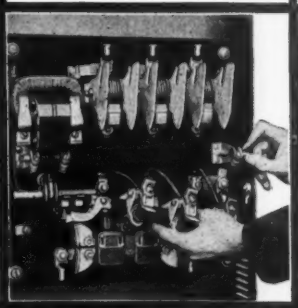


3 *Magnet coils easily interchanged to alter rating of starter. Easy demountability saves valuable time in replacing coils injured by abuse or accident.*

4 *Double pull solenoid type magnet. Quick powerful, positive pull insures full roll-and-rub contact action. Cool operation of contacts and freedom from pitting assures long life.*

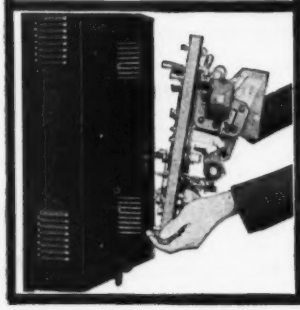
5 *Contacts easily removed for quick dressing or replacement. Contacts are heavy copper built to provide superior electrical connection with minimum wear.*

6 *Every starter part designed for quick replacement. This is most valuable service insurance—constant protection against shut-downs, even in the face of abuse to the starter*



7 *Chimney type arc shields and heavy blow-out coils quickly carry arc away from contacts, greatly increasing their life. Note simple removal. Free working room thus obtained makes upkeep of contacts simple and easy.*

8 *Hardened and ground steel bearings used for switch mechanism. Adjustable to compensate for wear through years of steady service.*



9 *Case designed to provide easy access to all parts of starter. Entire design such that installation or work of any sort requires least possible time and effort.*

10 *Entire panel easily removed from case when installation requires that wiring be pulled through conduit. Weight of panel is borne by mounting straps at rear—not by case.*

"Across-the-Line" Starters built to a new Standard of Performance

ONLY the features of design you find in Cutler-Hammer "X" Starters could make possible the remarkable performance records these new starters have established.

Millions of operations—a standard beyond all limits of normal service, but one which insures dependability and low cost maintenance such as never known before. Such features as the hardened steel switch bearings, new "chimney" type arc shields and heavy duty blow-out coils, the instantly replaceable contacts, the cushioned, double pull, solenoid type magnet with shading coil—such features are better than a written guarantee of satisfaction to men who know from experience where ordinary starters give trouble.

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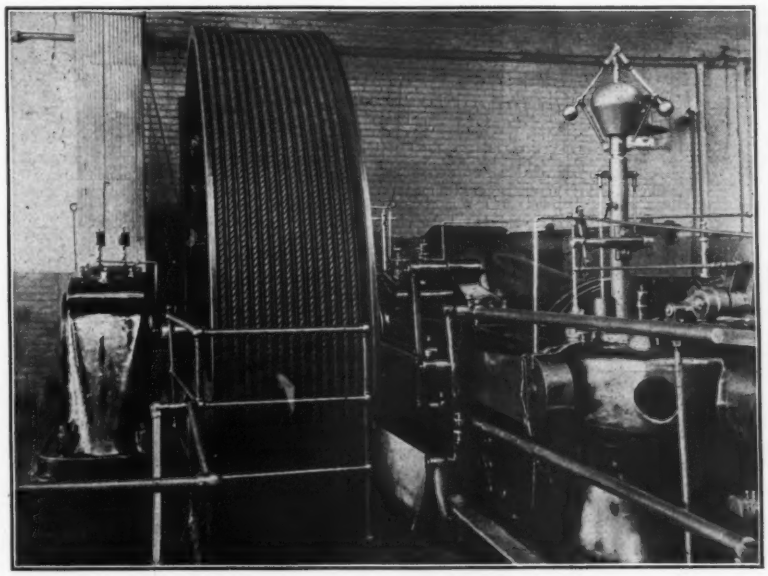

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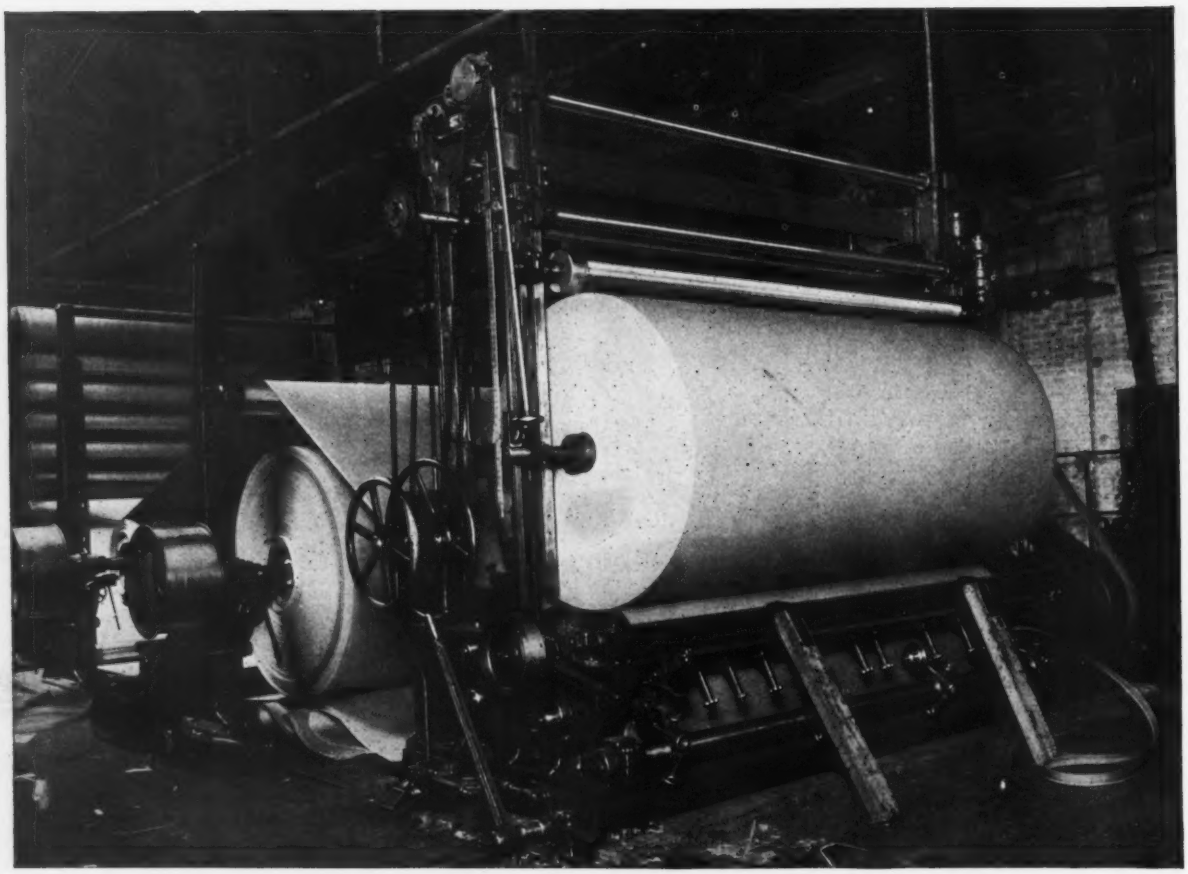

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PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-SIXTH YEAR

Published Every Thursday by the

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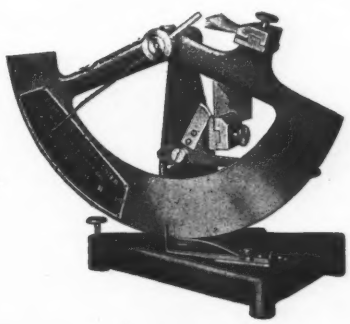

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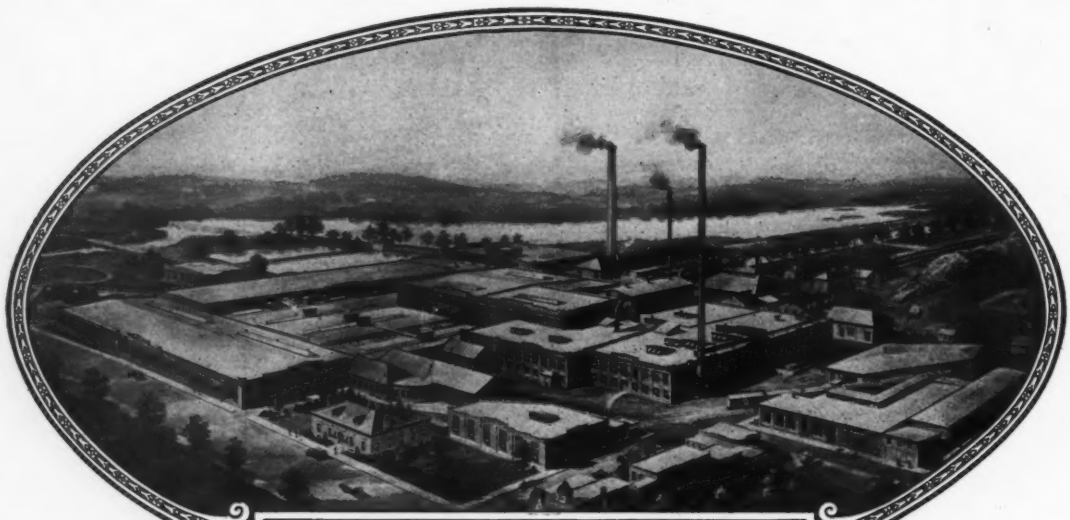

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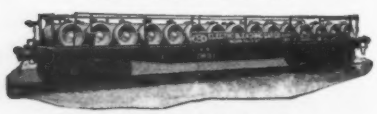

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Vol. LXXXV, No. 4 Thursday, July 28, 1927

Dr. Baker Reviews Big Development on Coast

Executive Secretary of the American Paper and Pulp Association Who Is Traveling Through the Pacific Northwest Tells Portland Chamber of Commerce of the Marvelous Expansion That Is Taking Place In That Section From Data Furnished by B. T. McBain—Some of the Big Projects Started and in Prospect

PORTLAND, Ore., July 22, 1927.—Emphasis was laid on the importance of the wood pulp and paper manufacturing industry of the Pacific Northwest by Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, at the conclusion of his visit here while addressing the Portland Chamber of Commerce.

Paper Production in Oregon and Washington

On data furnished him by B. T. McBain of Portland, pulp and paper specialist, the New York visitor stressed the facts that the production of pulp paper in Oregon and Washington now approximates 2,000 tons daily, the large increase having come within a very few years; that the yearly output now is $100,000,000; that the industry's payrolls amount to $150,000 daily, or $45,000,000 a year, and that 6,000 wage-earners are employed directly and as many more indirectly in carrying forward the activities relating to wood pulp paper manufacturing in this region.

The sketch furnished by Mr. McBain to Dr. Baker showed that commencing at Bellingham, Wash., on the north, the San Juan Pulp Manufacturing Company has a 50-ton sulphite mill operating, and the Pacific Coast Paper Company, with a 10-ton tissue mills, is one of the new realties there. In addition, the Bloedel-Donovan Lumber Company has announced a new pulp and paper mill at Bellingham.

At Anacortes, 40 miles from Bellingham, the Fidalgo Pulp Manufacturing Company has a new 50-ton sulphite mill in operation.

At Everett, Wash., the Everett Pulp and Paper Company is making about 100 tons daily of soda pulp and book papers.

Muck Talk of New Mills in Seattle

In Seattle, much talk is indulged along the line of pulp and paper production.

At Sumner is a new mill producing 50 tons daily.

At Tacoma the Cascade Paper Mills are operating a soda pulp mill, and an adjoining book paper mill, the output being 50 tons daily. A new and larger paper machine is about ready to operate.

The Tumwater Paper Company at Olympia is installing a 134-inch Beloit paper machine, a small ground wood plant and all needed auxiliary equipment.

At Tacoma, also, the Northwestern Pulp and Paper Company, a Delaware corporation, is planning to build a sulphite mill of 50 tons capacity. This project has the same name as the Northwestern Pulp and Paper Company of Astoria, Ore., an Oregon corporation. These companies have no connection, and no doubt something will be done toward changing the name of one company or the other.

West of Olympia, at Shelton, the new sulphite mill of the Rainier Pulp and Paper Company, with a capacity of 100 to 125 tons, has commenced operating under the management of L. S. Burdon, formerly of Oregon City.

Occident Pulp Mfg. Starts at Edmonds

North of Shelton, on the east shore of Puget Sound, at Edmonds, the Occident Pulp Manufacturing Company recently placed in operation a small ground wood pulp mill.

At Port Angeles, on the Olympic peninsula, are two pulp and paper industries operating. One is the Washington Pulp and Paper Company, operating three news print machines. The other is the Paraffine Company's plant, producing heavy paper board from its own ground wood and sulphite pulp plants.

At Aberdeen, several new pulp and paper mill projects are maturing, but none is yet positively assured.

The Zellerbach Paper Company, through its auxiliary corporation the Hoquiam Pulp and Paper Company, is now doing the necessary engineering work for a 120-ton sulphite paper mill.

At Longview, Wash., the Longview Fibre Company is building a 125-ton sulphite pulp mill and also a mill for production of wrapping and kraft paper. This plant will be guaranteed not to give off the disagreeable odors usually complained about. At Longview, also, is a small board mill operated by the Longview Strawboard and Paper Company.

Columbia Paper Co. Starts Second Machine

A second 136-inch machine for making wrapping paper has been ordered by the Columbia River Paper Company at Vancouver, Wash. The original plant produces 50 tons daily of sulphite from sawmill waste from a small hemlock mill.

At Camas, Wash., the Crown Willamette Paper Company has a 200-ton paper mill with all required equipment for ground wood, sulphite and sulphate pulp production. This mill makes tissues, kraft and sulphite wrappings, news print and magazine papers.

In the Spokane area, the Inland Empire Paper Company produces 100 tons daily of news print.

An important center in the paper industry is at Oregon City.

(*Continued on page 34*)

Reorganization of Peshtigo Paper Co. Planned

Survey of Financial Condition Shows Splendid Progress Made Under Receivership — Re-Financing Will Secure Needed Working Capital and Continuous Operation Is Assured— First News Print Machine Begins Daily Run at Thunder Bay Plant

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 23, 1927.—Termination of the receivership and complete reorganization of the Peshtigo Paper Company, Peshtigo, Wis., will take place on August 1, according to announcement of P. M. Allen, receiver-manager. The mill will be sold at that time and arrangements have been made for a stockholders' and security holders' protective committee to bid for the property subject to first mortgage bonds and receiver's obligations.

Under the plan of refinancing, the copitalization will consist of approximately $1,085,000 worth of first mortgage 7 per cent bonds of the Peshtigo Paper Company, to be assumed by the new company, $200,000 of second mortgage 7 per cent notes; $500,000 (approximately) of 7 per cent preferred stock, noncumulative during the first five years, and 20,000 shares of common stock of no par value.

Sufficient funds are to be secured to furnish the needed working capital, and the debenture indebtedness is to be reduced. Certain other unsecuerd obligations are to be converted into preferred stock. The operating funds will be obtained by giving second mortgage 7½ per cent notes of the new corporation. These will be offered to the debenture holders, creditors and stockholders of the old company to give them opportunity to recoup their losses.

The outlook for the new corporation is decidedly favorable. An inspection of the plant and a survey of the financial conditions were made by the Morris F. Fox Company and the Quorles Company, and they were quite well satisfied with the progress that has been made under the receivership.

Credit for the favorable circumstances under which the mill passes into a new era falls largely on the shoulders of P. M. Allen, formerly sales manager of the Detroit Sulphite Pulp and Paper Company. He came to Peshtigo on February 5, 1917, to succeed John D. Bird of Milwaukee, as receiver. The mill has been operating practically at full time since Mr. Allen's arrival. It has emerged from a heavy deficit at the time of his appointment and during the month of May showed a modest profit above the first mortgage bond interest.

Capitalization hereafter will be on a basis comparable to other mills of similar character and tonnage. The company hopes to relieve itself for the time being of all fixed charges on its capitalization other than first mortgage bond interest and interest on the new capital to be introduced. Mr. Allen seems to be an essential part of the reorganization plan and it is believed he will continue as manager in view of the progress he has shown. He has reorganized the productive facilities and has improved the property itself and the mill surroundings.

Two new 1500-pound Jones beaters have been installed recently and a new stuff chest with a capacity of approximately 10,000 pounds. A slasher also has been added to expedite handling of pulp wood to the wood room. Some of the old buildings on the grounds have been removed and the land leveled and improved.

The company has orders booked well ahead so that continuous operation is well assured. Employment is given to 175 men, with an approximate payroll of $400,000.

Port Arthur Mill Begins Operation

Production of paper was begun this week by the new mill at Port Arthur, Ont., of the Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis. The first of four machines which eventually will be installed is now making its daily run and producing 125 tons of news print. The machine turns out a sheet which will trim 230 inches wide. Its normal operating speed is 1,200 feet per minute. The Consolidated Company installed in its mill at Wisconsin Rapids ten years ago what was considered the fastest news print machine in the world, producing a sheet 146 inches wide and 85 tons a day. It again goes into the lead with the Port Arthur machine. A second machine of like size and capacity is to be installed at once and will be placed in operation about Jan. 1, 1928.

Special exercises will be held at Port Arthur in about a week to celebrate the start of production at the new mill. G. W. Mead, president, and other officials of the company's various mills will take part. Production at Port Arthur is directly in charge of Frank Brown, and the general manager is C. E. Jackson. The company also celebrated the opening by producing a special edition of its monthly house organ, "Consolidated News." The magazine contains sixty pages, and details the history of the company and the Port Arthur project.

The Consolidated Company made its start at Port Arthur by purchasing the pulp mill known as the Kaministiquia Pulp and Paper Company in 1922. The equipment was composed of four grinders, four wet machines, four hydraulic presses and a few hand barkers. Improvements made immediately increased the production from twenty-four to sixty-five or seventy tons of pulp a day.

In 1924 the name of the pulp mill was changed to Thunder Bay Paper Company and an addition was built to accommodate more grinders, presses, etc. Manufacture of news print became an ambition of the company in February, 1926, when the Canadian government granted huge timber rights to the Consolidated. A site north of the pulp mill was chosen and construction was started in April of that year on the vast new paper mill. About a year was required to build the plant, and it is now operating daily with machine No. 1, built by the Beloit Iron Works. The second will be erected at once so that by the first of the year the mill will be turning out 250 tons of paper a day.

Pulp Wood Movement Retarded

Swollen waters of the Menominee River caused the Kimberly-Clark Company to lose about 400 cords of pulp wood at its mill at Niagara, Wis., this week. A boom which held 1,000 cords was stretched across the river but it failed to withstand the pressure. It finally gave way and part of the logs went over the falls before the situation could be controlled. The company expected to be able to recover most of the logs at a point some distance further down the river.

Rafts of 14,000 feet of pulp wood each are being towed across Lake Superior from Nipigon Bay to Ashland for the Consolidated Water Power and Paper Company, for shipment to Wisconsin Rapids, Wis. The company's boats operating under the name of the Negaygo Tug Line are making trips regularly. Some stormy weather has been encountered, but the rafts have remained intact.

Labor Day Contest Arranged

Fire departments of various mills of the Kimberly-Clark Company will engage in a Labor Day contest at Niagara, Wis., according to plans which are now in preparation. Their skill will be tested in preparing apparatus for a fire, climbing ladders, handling hose and in speed of operation. Mills at Neenah, Apple-

ton and Kimberly, Wis., will enter teams. The company is also arranging for the annual outings of employees of each mill on Labor Day in accordance with the usual custom.

Paper Mill Fireman Drowned

Melvin Bruch, Appleton, Wis., fireman at the Atlas mills of the Kimberly-Clark Company, was drowned this week. He was fishing in the Shioc River near Black Creek, Wis., when he stepped off a ledge into a deep hole. He was unable to swim and members of his family were helpless to rescue him. He was 26 years old.

Nekoosa-Edwards Addition

Construction has been started by the Nekoosa-Edwards Paper Company at its mill at Port Edwards, Wis., on a new finishing room. The dimensions are 160 by 180 feet in size, with one story and full basement. The unit will cost $160,000 and will be completed about October 1.

Increased output of the mill, and the manufacture of higher grades of paper, made this addition necessary. Two 3-ton cranes will be installed. The building has been named the John Edwards Finishing Room Extension.

This company recently completed installation of a fourth digestor at the Port Edwards sulphite mill. The capacity thus is increased to 20 tons. The machine was built by the Manitowoc Iron Works.

Schneller and Brooks Honored

Frank J. Schneller, vice president of the Gilbert Paper Company, and W. A. Brooks, secretary of the Menasha Printing and Carton Company, are among the directors elected by the newly organized Neenah and Menasha Finance Company, a new bank and loan organization at Neenah, Wis.

Appleton Wire Works Expanding

An addition costing about $18,000 is being built by the Appleton Wire Works at its plant at Appleton, Wis. It will be of brick and steel. The company will install new looms in this unit so as to produce wider Fourdriniers in response to a demand from the trade. The plant will now occupy one entire city block.

Rapid Progress on Fort Edward Mill

[FROM OUR REGULAR CORRESPONDENT]

FORT EDWARD, N. Y., July 25, 1927—Rapid progress is being made by the Domil Construction Company with its contract at the Fort Edward plant of the International Paper Company, and it is expected that the work will be completed well within the contract date. A large force of workmen is employed and the work is going forward without interruption. Some of the older buildings have been demolished and have been replaced by new structures. At present work is under way on remodeling the old sulphite mill. A new roof is being placed on this building and other alterations and improvements are being made. One of the new buildings already completed is to be used for the storage and grading of stock.

First indication that the International Paper Company was preparing to resume work at the Fort Edward mill came a few days ago when a shipment of old magazine stock weighing two hundred tons arrived at the Fort Edward terminal from New York City. The shipment was brought in by the barge "May Murray" which has been carrying newsprint from Fort Edward to New York. The consignment was unloaded and stored in the newly erected building which will be known as the assorting department. The local I. P. Mill will make bond paper when operations are resumed.

Work will be commenced within a few days on the construction of the branch railroad by which the company plans to connect the various units of the plant with the canal terminal. It is planned to use the barge canal to the fullest extent and increased facilities are being provided for that purpose.

Improvements at Superior Div. of Bryant Paper Co.

KALAMAZOO, Mich., July 25, 1927.—Extensive improvements on the Superior Division of the Bryant Paper Company's plant have been completed by R. D. Boyer Company. These include the erection of a large washing machine, in many respects similar to the original washer installed in the new conversion plant. This gives duplicate equipment, either unit of which, according to Mr. Boyer, is capable of supplying the entire Bryant and Superior Divisions with washed stock.

In connection with the installation of the washer, a large storage tank to carry a supply of unwashed stock was also erected as well as a pneumatic filter. This work was of concrete. Other construction work at the Superior includes a new floor and new roof, also setting foundations and piers for two new super calenders. It is also indicated that the washing equipment of this division may be increased at a near date. These improvements have been made by the conversion of a sorting room, at one time in use before the present system of sorting and washing was in vogue.

The improvements at the Superior Division, followed the erection of a new machine room at the Bryant Division, said to be one of the finest structures of its kind in the Kalamazoo valley. It is 87 feet wide, 280 feet long and a total height of 54 feet from the basement to the top of the parapet walls erected by the R. D. Boyer Company, working under plans prepared by V. D. Simons, Chicago. It is part of the program outlined by the complete rehabilitation of the Bryant Paper plant.

The machine, a 164 inch fourdrinier, was erected jointly by the Beloit Iron Works, which made the wet end, while the dry end was built by the J. H. Horne & Sons Company. After months of operation, this machine had demonstrated its true value and will be good for 45 to 50 tons of paper daily.

To Hold Tenth Annual Outing

The regular summer outing of the Metropolitan Bag and Paper Jobber's Association will be held this year at Narragansett Inn at Lindenhurst, Long Island, on Thursday, August 11, 1927.

This is the tenth annual outing of the Association, an affair proved in the past to be the occasion of the year, when the entire paper industry avail themselves of the opportunity to gather socially and spend a full day in the open in the most attractive of surroundings. This year particular pains have been taken by the Association in choosing an appropriate place for the occasion and all indications are that this will be a day long to be remembered by all the members and guests of the Association who will attend.

As its tenth regular annual summer festivity, the Arrangement Committee of the Association is making particular efforts to make the day outstanding in features and enjoyment. Members and guests meet at Borough Hall, Brooklyn, at 9 o'clock in the morning, where they are taken by De Luxe buses to the grounds for a full day of unstinted pleasure. The Committee, supervised by George W. Batz, Alfred E. Macadam, Jr., and Nelson Berger, promise a repetition of the successful affairs of past years, and even more. The Association invites everybody in the industry to avail themselves of the opportunity to attend this occasion.

Map of Finland's Pulp and Paper Mills

The Finnish Timber and Paper Calendar has just issued a map showing the Finish Wood-Working establishments as a supplement to the directory issued by it last year. The map is probably the first one of the kind ever published. It gives the location of all the plants in the Finnish wood-working industry including sawmills, cellulose plants, mechanical pulp plants, paper mills etc. The price of the map is Sh 10, postage prepaid. It may be ordered from the Finnish Timber and Paper Calendar, Helsingfors, Finland.

Mid-Summer Quiet For Los Angeles Paper Trade

Demand, However, Is Expected To Show Encouraging Revival About September 1—Howard P. Beckett of the National Paper Box Manufacturers Association Suggests New Way To Stimulate the Demand for Paper Boxes—Bates Valve Bag Co. Busy in New Plant

[FROM OUR REGULAR CORRESPONDENT]

LOS ANGELES, Cal., July 22, 1927.—The paper trade in Los Angeles is experiencing the usual mid summer dullness with volume considerably off from what it was a month ago. However, since this was not unexpected, nobody is generally concerned about it. Trade is expected to revive sharply about the first of September. While, generally speaking, business conditions in Southern California leave much to be desired at the present time, yet, with agricultural conditions as favorable as they are, there is no reason for apprehension regarding the future.

There have been no price changes of moment during recent weeks and apparently none are imminent. In fact, regardless of what conditions may be which may affect business between now and fall, most of the jobbers think the paper market will continue firmly where it is now.

Paper Box Men Hold Luncheon

The Los Angeles Paper Box Manufacturing Association held a luncheon July 7 as the Van Nuys Hotel in honor of Howard P. Beckett, commissioner for the National Paper Box Manufacturers Association, who was making his first visit to Los Angeles. About ten of the Los Angeles manufacturers attended the affair. Mr. Beckett spoke to the assembled manufacturers and made one or two suggestions which are likely to give rise to not a little thought among the membership. One was his suggestion that every year a Paper Box Week might be held during which the display windows in some of the leading stores might make displays of both folding and set up boxes. He said that the public in general knew nothing about the variety of paper containers there were on the mar ket, nothing about the variety of uses to which paper containers were put in industry, and nothing about where these containers were manufactured. He was of the opinion that a Paper Box Week might have an enlightening effect.

Another suggestion he made was directed to the merchandising methods of the manufacturers themselves. He said that one of the principal purposes of paper containers was to serve as advertising, both for the contents of the package contained inside them, but also for the manufacturers of the contents and sometimes for the concern which was instrumental in getting the goods into the hands of the consumer. This function of the container was too frequently lost sight of by the manufacturer of the container, and so, when he was seeking a salesman to sell his containers, he did not think of the advertising value they carried. For this reason Mr. Beckett suggested that an experienced advertising man might prove to be a far more successful salesman for a line of paper containers than were many of the men customarily employed for that purpose. He illustrated his point by recounting some instances of advertising men becoming successful salesmen of paper boxes of which he had personal knowledge.

Paper Men Play Golf

Members of the Los Angeles Paper Trades Association are engaged in playing a golf tournament which will not terminate until next September. One day a week is devoted to the game, which is played by the heads of the departments among the concerns which belong to the association. In all, nine games will be played at seven of the leading country clubs in the vicinity of Los Angeles. In every event the member who belongs to the particular club acts as host to the two foursomes playing the tournament. A suitable prize will be awarded at the close of the tournament to the individual player who shall have made the lowest net score during the nine games. The members of the association, both those included in the foursomes and those who merely take an academic interest in golf, are watching the games with keen interest.

Bates Valve Bag Co. Prospers

Since the Bates Valve Bag Company, 2001 East 57th street, Los Angeles, began the manufacture of paper bags here early in 1926, the concern has experienced a most phenomenal growth. It started manufacturing bags at its old plant on Humboldt street, but a few months ago it moved to its present location adjacent to the California-Oregon Paper Mills, since all of its stock is secured from that concern and it was economical and efficient for it to be conveniently located near the source of its supplies. In fact the building it occupies was built by the California-Oregon concern and was rented by it to the Bates Valve Bag Company. The Bates Valve Bag Company is the only concern on the Pacific Coast making bags suitable for plaster and cement containers. Although plaster long has been shipped in paper bags, it is relatively new on the West Coast for cement to be so shipped. This use of paper bags had commenced in a limited way about two years ago, but now it has assumed very large proportions. The fact that the normal consumption of paper for bags of this variety by the Bates concern aggregates in excess of 500 tons a month gives some indication of the growth in volume this company has experienced during the last two years.

Angelus Paper Box Co. Complete Factory

The three-story brick factory building of the Angelus Paper Box Company on East 61st street has just been completed and an entire complement of machine equipment is being installed. The new building has a floor space of 35,000 square feet and will more than double the capacity of the company for the manufacture of paper containers. It is expected that operations will have begun within the next two or three weeks. The new factory will be devoted to the production of corrugated containers, as the old factory, located at 755 North Broadway, will continue to be the headquarters for the folding and set up box activities of the concern.

Spaulding Mill To Start About September 1

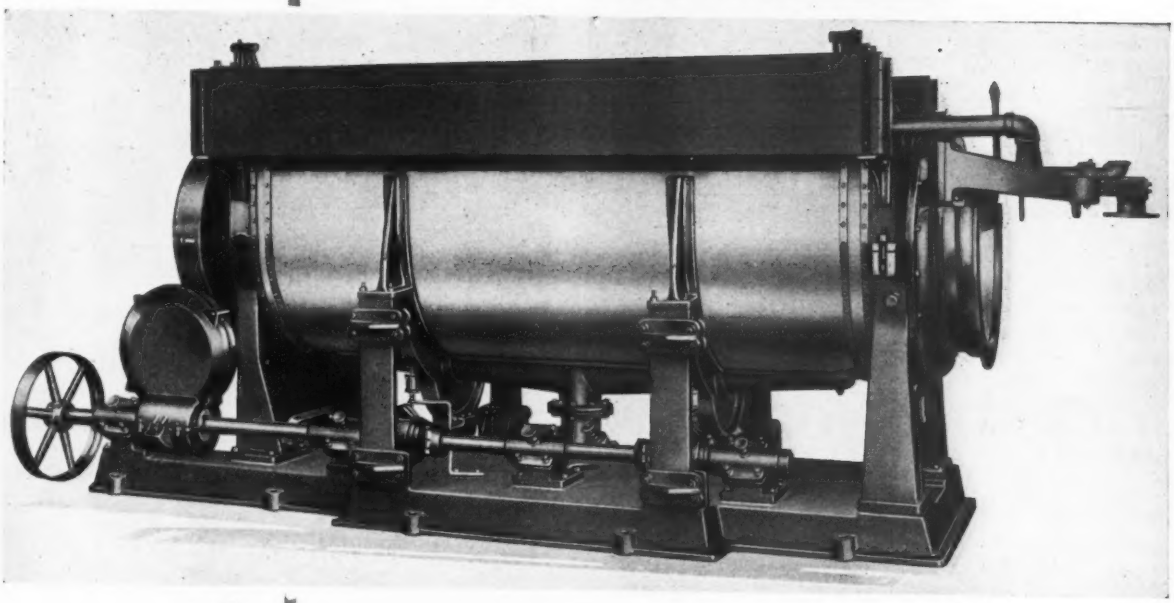
PORTLAND, Ore., July 25, 1927.—The pulp plant of the Spaulding Pulp and Paper Company which is now under construction at Newberg, Ore., it is now definitely assured will be in operation September 1, barring any unusual interruption. The paper plant will not be started until later. About 125 men are now working on the construction of the pulp factory.

A large contract has been closed by the Spaulding company with the Perkins-Goodwin company of New York, for the handling of the pulp. This material will be dried and baled and shipped to eastern points, probably Wisconsin and Michigan according to present outlook.

Ernest Sweitz, engineer of plans for this mill, has been connected in his official capacity on the Pacific coast for more than seven years, and in his supervision of machine installation in the Spaulding plant is working with his usual efficiency.

The acid towers, completed several weeks ago, are capable of supplying a 100-ton mill. Two digesters have been completed by the Williamette Iron and Steel company, these being sufficiently large to turn out 50 tons daily. It is said foundations may be laid for the installations of from four to six digesters of like size. At least everything in the construction is being arranged with a view to eventually making this plant a large enterprise as business may justify.

BIRD MACHINERY



Twenty odd thousand tons of paper pass through Bird Screens daily

Judged either by performance or by the endorsement of an overwhelming majority of paper makers, the better Bird Screen is way ahead of the crowd.

BIRD MACHINE COMPANY
South Walpole - - - - Massachusetts

a better BIRD SCREEN

1141

Paper Business Continues Spotty in Toronto

Book Paper Demand Is Holding Up Well and Mills Are Generally Working at Satisfactory Capacity—Outlook Is Gradually Improving and Prospects for August Appear Brighter—News Print Curtailment Considered in Ontario and Quebec

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., July 25, 1927.—Business in the paper line picked up some during the closing days of last week after a rather quiet spell, but trade continues to be spotty. The outlook, however, is improving and it is expected that August will be a better month than July. Mills are well employed and, although there is generally a letting up in the book paper demand at this season, so far there has not been any evidence of it.

The rag and paper stock business is good but collections have fallen off considerably of late. There is a fair demand for all grades of new cotton cuttings although some consuming plants are not running full on account of seasonal dullness. Plants making toilets and tissues and light weight wrappings are finding orders quite numerous. The call for paper napkins, luncheon sets and towels is good and the wrapping paper situation is not too dull for this season of the year. There have been some slight readjustments in prices on manila and fibers, which have, however, in no way affected requisitions. The present month is proving a good average one for the coated paper mills. Kraft is in satisfactory demand while the pulp situation shows no change.

New Board Plant for Toronto

It is understood that the Canadian Paperboard Company, Montreal, who have plants in that city and at Campbellford and Frankford, Ont., ore negotiating with the Harbor Board of Toronto for a lease of ten acres on the water front. The plant will manufacture board and erect a large mill if the present arrangements go through. Some 200 men would be employed.

May Curtail Paper Mill Erection

For some time past there has been a feeling that too many paper mills are being erected and that there is danger if all the projects in Ontario are carried to completion, of such a surplus of news print as will glut the market, force existing mills either to reduce their output greatly, or endanger the stable character of the investments. It is reported that the Ontario government is considering the means of preventing over production. Thirteen or fourteen new units within the next two or three years are to be installed in Ontario and this is considered to be far above the average normal increase in the consumption of print paper.

In a recent interview, Premier Ferguson stated that Ontario and Quebec were well agreed on a policy regarding the news print industry and denied that there was any possibility of an early conference between the two governments on the matter of industrial curtailment, which in some quarters, it deemed imperative if the present situation is to be taken care of.

Big Construction at Blind River

A vast transformation is taking place these days at Blind River, Ont., under the direction of the Carpenter-Hixon Company, which is carrying out a progrom of construction development that is arousing interest in all parts of the country. Orders have been placed for a greater portion of the machinery and equipment and work is going ahead as rapidly as can be expected. The company is laying out a fine land yard for piling purposes and will have all the alleys paved. The Carpenter-Hixon Company expect to operate thirteen logging camps on the White and Mississauga rivers during the coming logging season and it is hoped that these camps will produce sufficient logs to make 100,000,000 feet of lumber during 1928 if the calculations of the company as to the capacity of their new mill are accurate and the length of the sawing season is favorable. L. G. Carpenter, vice-president and managing-director of the company, is on the job every day at Blind River and is closely in touch with the progress of the work.

Peeling Season Nearing End

The pulp wood peeling season, which has been in existence in Northern Ontario for some weeks, will shortly come to an end and the amount of wood being taken out is large. The number of new mills under erection will, it is expected, call for an increased supply and shipments are going forward in heavy lots every week to United States points from the Thunder Bay district. Prices for wood are about the same as last year and some heavy contracts have been made for supplies by contractors. While some time ago a report was to the effect that there would be a sharp advance it has not yet manifested itself and conditions are about the same as they have been for many months.

Notes and Jottings of the Industry

Beverley Maguire, of the sales staff of the Provincial Paper Mills, Toronto, has returned after spending a holiday at Wasaga Beach, Ont.

Bert Sheppard, of the A. C. Woodward Printing Company, Chatham, Ont., was in Toronto last week calling on the paper trade on his return from a trip to Boston and points east.

Thomas Boddy, of the city sales staff of the United Paper Mills, Toronto, is spending his holidays at Thurstonia Park, Victoria County.

The annual outing of the employees of the C. V. Syrett Paper Company, Toronto, took place recently to Victoria Park, Niagara Falls, Ont., and was well attended. An interesting program of sports was conducted and a pleasant time spent by all.

The contract for seventy-four houses has been let by the Spruce Falls Power and Paper Company at Kapuskasing, Ont. They will be of frame and stucco construction and will cost about $280,000.

J. R. Booth, Ltd., Ottawa, has started the construction of a pulp wood rossing plant at Latchford, Ont., where the firm acquires considerable wood supplies.

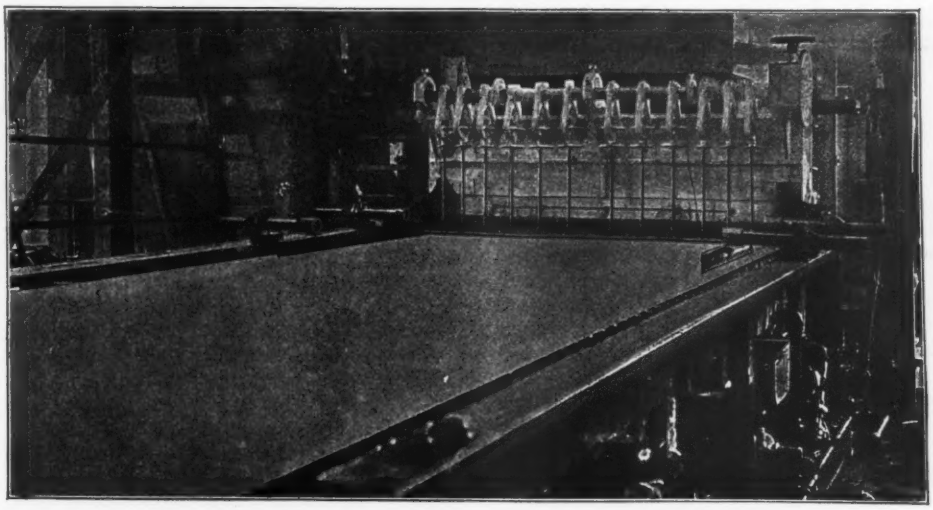
The new news print plant of the Thunder Bay Paper Company, at Port Arthur, Ont., has started operations, the new machine turning out the first rolls last week. The mill will soon be producing on a normal basis.

Archdale Wilson, of Hamilton, who was the inventor and manufacturer of Wilson's fly paper pads, died recently in that city after a long illness, in his seventy-ninth year. He is survived by his wife and one daughter.

The party of 100 British journalists, who will arrive in Quebec on August 12, will tour several cities in Ontario during their itinerary and, it is expected, will visit several pulp and paper plants.

The United Paper Mills, Toronto, have been appointed Ontario selling representatives for Ravenna covers which are made by the Kamargo Mills, at Watertown, N. Y.

Several improvements are being made to the Kenora Paper Mills, at Kenora, Ont. A new stacker for pulp wood will be installed and the capacity of the wood room will be doubled. There will be a new slash table, new conveyor, sorting conveyor and strong retaining walls to hold off pressure of storage wood pile around the south and east sides of the barking drums. Brick walls will be built to enclose all the extensions to the wood room. The three furnaces are also being rebuilt.



No-Deckle Strap Convenience and Economy Pay!

The No-Deckle Strap Arrangement effectively does the work of the former expensive and cumbersome deckle strap equipment. It is easily installed on the ordinary paper machine and it can be placed on machines having special devices carried above the wire as used in the making of special papers—blends, marbles, cheviots, etc. The weight of the deckle straps is entirely eliminated and the wire with its clean, open sweep supports only the stock passing over it.

Deckle changes can be made while the machine is running without cutting into production time. Instant control is obtained over the width of the sheet with very little effort. There is no tendency to wear the wire and much time is saved in making wire changes. In removing deckle straps, it is apparent that an increased wire surface is available in making maximum width of sheet. This sometimes is a very important item to the paper manufacturer when he finds that his machines are too narrow by a few inches to accept orders for a certain sized trimmed rolls. Let us give you complete information about No-Deckle Strap efficiency.

VALLEY IRON WORKS CO.

APPLETON, WISCONSIN

New York Office: 350 Madison Avenue
Western Mfg. & Sales Div., Smith & Valley Iron Works Co., Portland, Oregon

Demand for Paper Improving in Philadelphia

Excellent Request Experienced for Small Lot Purchases of Fine Papers—Coarse Paper Market Fairly Active, With Wrapping Paper Moving in Spotty but Livelier Quantities — Leading Specialty Manufacturers Working at Capacity

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., July 25, 1927.—An evidence of advance Fall preparation for resumption of manufacturing activities in the Philadelphia trade came with the passing week when consumers were shopping about for small but broader variety of orders in many grades of papers than for several weeks. While this type of ordering was not as gratifying as could be desired there nevertheless was some awakening of interest in the paper industry on the part of industrial enterprises that normally are heavier purchasers of many grades of wrapping and standard grades in the coarse division at this season. Some future deliveries of fair size orders were booked during the week with consignment date forthe month ot August. A decided firmness in the values of paper has marked the dog days of 1927 as the most stabilized period that has been noted since the booming markets of the war days.

Fine Paper Moves in Fair Volume

The continued demand for small lot purchases of fine papers has been the dominating factor in that branch of the distribution industry. Printers and publishers have been more active, and their needs in fine papers accordingly increased. There is no inclination on the part of the consumers to place larger contract orders for the remaining half year at this time and the tendency is to delay stocking pending more certain indications of industrial activities for the coming Fall. The larger printing and publishing firms will be more active in contract orders with the late August or early September if the present attitude of the allied consumers is maintained.

Manufacturers Attain Normal Summer Schedule

Paper manufacturers in the Quaker City and surrounding territory are now near summertime normal schedule of operation. A few of the larger producers of specialties are working to capacity and have plenty of advance orders but the majority of the paper mills are confined to limited seasonal operations. There is growing interest in the manufacturing branch of the industry for Fall supplies and orders are steadily increasing though not as numerous as they could be in view of the prolonged cautiousness of the mills in curtailing production throughout the first half of 1927.

Wrapping Paper Moving

As the various manufacturers catering to the mercantile trades become more actively engaged in the preparation for the autumn demands, the wrapping paper and specialty lines are moving in spotty but livelier quantities. The box manufacturers are in the market for boards, fancy cover papers and other grades used in the production of clothing, hat and like merchandise containers that will shortly be sought by merchants for Fall stocking. Wax papers for the food trades are also among the seasonally active supplies. Builders supplies have been moving freely with the heavier demand of the summer construction months creating a broader market for roofing, felts, wall boards and like paper building materials. Shoe manufacturers have been more active and box and other grades of paper for that industry are in active supply. Paper bags are steadier with a slight advance in prices. It is understood that a movement is under way to steady the bag market with the larger bag manufacturing interests involved.

Paper Stock Shows Life

Paper stock shows some signs of life after almost six months of listlessness and demoralized prices. While prices have been sunk to rock bottom levels for the current year and are at the lowest since war days with values below pre-war times, they are now being adjusted to the more active demand which is in evidence. Mills are making frequent inquiries for tonnage supplies but are confining present actual orders to smaller volume purchases. Shipments of stock throughout the week were at the June value but it is expected an upward turn will be made in quotations with the coming month. Common grades are plentiful but the better stocks are scarce. The rag market, like the stock division, is showing signs of life and rising prices.

Typothetae Canvas on 1000 Sheet Count

A canvas of the printing industry taken by the Typothetae of Philadelphia by special request of the Executive Board of that organization and made by personal questionnaires sent out by Manager Director William Weeks, of the printers association, shows that 80 per cent of the allied crafts members are in favor of the 1,000 sheet count adopted by the National Paper Trade Association as the unit for packing and distribution in substitution of the ream. President Sharpless, of the Typothetae, now on vacation, following out the desires of the executive board of the master printers organization, directed Manager Director Weeks to make the survey questionnaire before his departure for the summer holiday. The returns are now completely in the hands of the Typothetae and show that the 1,000 Sheet Plan is favored by the majority of the printers and allied industries. In stating the case for favoring the 1,000 sheet count, the printers give the possibilities for prevention of confusion in the accounting for their paper shipments from the dealers. They claim that the 1,000 sheet count gives more accurate record in paper estimation. They are desirous of determining the exact number of sheets that may be assigned to the pound weight so as to prevent confusion in summing up their needs in paper shipments, as well as the economy afforded by elimination of the broken package. Future action on the printers desires regarding the adoption of the 1,000 sheet count is to be taken upon the return of President Sharpless. The report will then be submitted to the executive board and its interests on the standardization of the packing unit determined.

The 1,000 sheet count was an interesting topic taken up at the recent meeting of paper men and the Baltimore City Typothetae when President Sharpless spoke before the combined gathering. As with the Philadelphia organization, the Baltimore Master printers group are interested in the adoption of a standardized method of determining the count of paper packing.

Graphic Arts Golfing Tournament

A torrential rain and the dullness of the overhead skies did not mar the enthusiasm of the allied associates in the various branches of the printing, publishing, and paper trades when they assembled at the Aronimink Country Club at Drexel Hills last Tuesday in the 11th Annual Golfing Tournament of the Graphic Arts Golf Association. A muggy day on a soggy links was offset by the liveliness of the contest of the Red and Blue Line-ups for the days' tournament and the spirited rivalry for the attainment of honors in the various features of the program. Despite gloom overhead there was cheerful contact in the glowing cordiality of trade associates and the friendly co-mingling of the allies in the business world and in the sporting diversions that linked closer the members of the associated industries in the bonds of good fellowship on the links.

Three features were scheduled in the mixed teams of printers and paper men that lined up for the contests of the Red and Blue

Dependability At the Outposts of Industry

NEW DEPARTURE Ball Bearings support shafts and gears of mechanisms installed in out of the way, hard to get at places without measurable wear. You can literally "put 'em in and forget 'em."

The need of frequent maintenance attention is minimized because New Departures never need readjustment and require lubrication only once in nine months or a year. They can be effectively sealed against lubricant leakage and hold original alignments during all of their long life.

Absence of radial play and friction permit accurate and precise starting and stopping, valuable characteristics in devices such as the Liberty Valve Operator, shown here. These advantages are found *only* in the ball type of anti-friction bearing.

The New Departure Manufacturing Co.
Detroit BRISTOL, CONNECTICUT Chicago

Manufacturers will find New Departure Engineering Bulletins on "Ball Bearings and their Universal Application" of great assistance in solving bearing problems. These are supplied without obligation at your request. Write for them now. Resident representatives are available for consultation on all subjects pertaining to bearing engineering. Interviews can be quickly arranged, if you will say the word.

New Departure Quality Ball Bearings

662

teams. In the matin hours the rival lines were staged for the match play for the hospitality of the luncheon, the winners the Red Team by a score of 12 to 6, being favored for the hosts at the service noon refreshments. The match play was followed by Kickers Handicap, in which the scoring of Lindsay Evans, of the Linsay Paper Company, placed him in the line for the last prize, and his associate in the paper industry, Louis Megargee, of the D. L. Ward Company, for 2nd award. Winners of the afternoon's important event—the contest for the silver cup award of the Philadelphia Paper Trade Golf Association, were members of the printing industries and allied trades. Gus Vasel, Philadelphia manager of the Ault and Wiborg Company, ink and varnish manufacturers, came out the champion in the contest, and will hold the Cup for the year for his record low net score. E. D. Stevens won the second prize for next low net.

Luncheon hour brought together the 200 associates from the allied industries in an informal social hour with seasonal good things to tempt the appetites keened by the outdoor accomplishments on the links. A word of greeting to the members of the Typothetae and the Philadelphia Paper Trade Association was extended on behalf of the paper men by Arthur B. Sherrill, of Reigel & Co., Inc., while the printers were welcomed by William Jennems, chairman of the entertainment committee for the Typothetae.

Among the paper men who were lined up on the Red Team were: Arthur B. Sherrill, S. A. Benedict, and President Eugene Fry, of the Jessup and Moore Company; Fred W. Hastings, American Writing Paper Company; Louis Megargee, D. L. Ward Company. For the Blues;—E. A. Weihenmayer, Jessup and Moore Company; David Lindsay, Jr., Lindsay Paper Company, and president of the Philadelphia Paper Trade Association; J. H. Taylor, W. C. Hamilton and Sons; W. W. Seary, Wilcox, Walter, Furlong Company; Howard Satterthwaite, Satterthwaite-Cobaugh Company; Lindsay Evans, Ralph Keenan, L. T. Supple, Whiting-Patterson Company, and W. S. Wilcox, Walter, Furlong Company

Golfing Honors for S. Walter and Co. Associate

Golfers in the professional and amateur sporting world were keenly interested in the First Annual Golfing and Outing Tournament of S. Walter and Company, Inc., 144 N. 5th street, held last Wednesday on the links of the Philmont Country Club, because of the record scoring made by George Hoffner, of the sales organization. Young Hoffner is the star of the Bala Golf Club and has won many laurels on the green but his scoring at the Walter Tournament places him on record in a tie with Ted Johnson, star of the Green Valley Club, who the week before made record on the third round of the Pennsylvania State Open Championship play. Johnson's record of 69 was tied by the paper trade champion Hoffner.

While famed in the golf fraternity of the Quaker City for this and past achievements on the links, young Hoffner placed the Walter Tournament in the front ranks of golf events of the week. There were 23 members of the S. Walter Company in attendance at this first annual gathering, including the executive, sales, office, and shipping forces. They were motored to the Philmont Club and then with the members of the firm, headed by President Simon Walter, joined in an entire day's program of lively diversions spurred by good fellowship between employer and employees. Swiming, tennis and golfing were scheduled in the sports program, while the social mingling of officers and workers at the luncheon table and dinner hour brought all together in the closer spirit of amity and good will and the hospitality of the firm. With Hoffner winning the golfing honors, other awards were made to Edwin Barnes, manager of the accounting department, as runner up on the links; to Mrs. Barnes, as winner of the swimming contest, and to Stewart Rains, who was victor in the tennis match.

Ellis Gimbel, head of Gimbel Brothers department store, was the guest of honor at the dinner given by the firm in the evening in the club house. He spoke a word of welcome on behalf of the club membership and then turned in tribute to his friend President Walter, complimenting the head of the firm on his kindly interest in those associated with him in the business, and the attention given to their welfare and happiness as co-workers of the Walter company. President Walter then spoke of the good will of the members of the firm towards the forces and briefly greeted them. He was followed by Vice President T. F. Kennedy, Secretary Valentine Wilson, and Treasurer Harry Lefkowith, of the company. The evening was given over to socal relaxation at the club and enjoyment of its luxurious surroundings and facilities in sports, the days program ending with the midnight hour.

W. W. Spear to Represent Black River Mills

Following many years association with the Philadelphia trade as the former representative of the Analomink Paper Company of North Delaware Water Gap, Pa., W. W. Spear last week made the rounds of the industry in a new field of distribution. He is now associated with the T. J. McCormick Paper Company, 30 E. 42nd street, New York. This firm represents the amalgamated distribution of the products of the Black River Mills from the northern New York manufacturing district. They manufacture chiefly textile papers used extensively in the Philadelphia territory by the larger textile manufacturers. Among the group of mills which are included in the Black River District are those of the Sherman Paper Company and Harmon Paper Company, the latter formerly devoted to the production of hanging papers but now equipping to produce textile papers.

John H. Sinex Improves

Paper trade associates and friends in the industry are gratified at the improvement in the health of the veteran head of the Garret Buchanan Company, John H. Sinex, now confined to the Pennsylvania Hospital suffering from heart ailment and throat complications, which necessitated removal of the tonsils. Following several weeks illness in his home he was removed to the Pennsylvania Hospital three weeks ago and last week underwent an operation for removal of the tonsils from which he is rapidly recovering. If the improvement continues, President Sinex will be removed to his summer home in Maine shortly. He is now nearing the four score milestone of life, being in his 78th year of age.

Improvements in Spring Grove Mills

After the final touches are put to the calender equipment of the mills of the P. H. Glatfelter Company, at Spring Grove, Pa., and the installation of additional electrical units for operation of these, the modernizing of the plant will be completed and ready for the extension of production to other lines than those already featured by that thriving Pennsylvania paper concern. For the past two years the buildings and units of the plant have been put under the modernizing plans with many new mechanical devices and accessories installed to perfect the paper making equipment. There has been up-to-date electrical units installed in the power plant and the recently replaced calenders that are now supplanted by the newest type give the mills one of the best paper making plants in this section of the country.

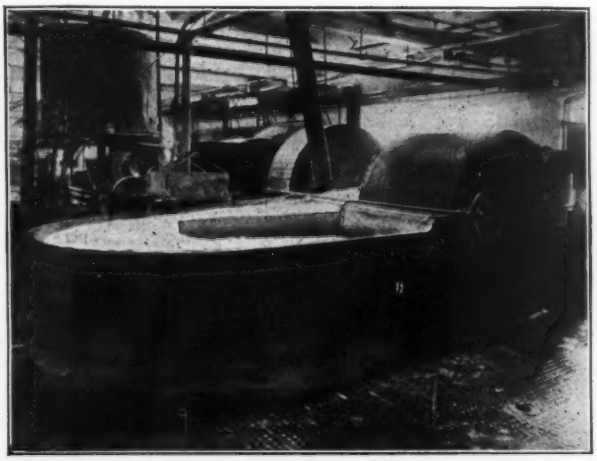
Cancellations for Wood Pulp in Sweden

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 27, 1927.—Of outstanding interest in the Swedish wood pulp market during May was the great number of cancellations of present year contracts for the purpose of replacing them with new contracts covering 1927 and 1928 at somewhat lower prices. As a result the wood pulp prices are still low and the outlook on the market uncertain. The groundwood market continued dull, sales of wet pulp not exceeding 45,000 metric tons whereof 30,000 tons are destined for the United Kingdom. Prices quoted on wet pulp are unchanged and those governing dry pulp show a little weakness.

HISTORY!

"Simple facts not foolish statements."



Here is an old beater rebuilt into the Dilts approved NEW TYPE. We used customer's old roll, stands, tub ends, bedplate, bedplate box, baseplate, etc. That the results were satisfactory is evidenced by orders for *six* more rebuilt beaters and *three* new beaters.

Read this letter from a mill designed to use *five* beating engines. We told them *four* Dilts NEW TYPE Beaters would do the work. They find *three* are sufficient.

Read their letter:

> **"Our chief engineer reports our new mill has reached its rated capacity. Your high speed beaters are very satisfactory and delivering a greater capacity than we actually need. We will therefore not need the entire *four* beaters which we have just contracted with you for our new plant to be built at..... as *three* of these beaters will take care of that plant's requirements.**
>
> **"We would appreciate it very much therefore if you would revise your new contract and send us one covering on *three* beaters only."**

These people now use Dilts NEW TYPE Beaters exclusively in three of their mills. They have found a great saving in their use. They are one of the very largest and most successful concerns making paper.

You, too, should use the Dilts approved NEW TYPE Beating Engines, because in your mill as well as in theirs.

"Your paper is made in your Beaters."

Dilts

MACHINE WORKS, Inc. FULTON, N.Y.

EXPORT OFFICE ~15 PARK ROW~ NEW YORK CITY

Obituary

Otto Wandel

On Sunday morning, July 3, Mr. Otto Wandel, chief engineer of the Susquehanna Silk Mills and Sunbury Converting Works, passed away very quietly of heart failure at his home 114 N. Front street, Sunbury, Pa., aged 46 years. His remains were buried at West Side Cemetery, Sunbury.

Before taking up his work with the Susquehanna Company about nine years ago, Mr. Wandel was identified for 12 years with the American paper industry. He was born on April 13, 1881, in Reutlingen, Wuerttemberg, the son of Christian Wandel, well known manufacturer of Fourdrinier wires. He studied at Darmstadt and later at the famous Testing Laboratories in Grosslichterfelde near Berlin. He secured diplomas both as Mechanical and as Chemical Engineer. In 1906 Mr. Wandel came to the United States and shortly afterward founded the Wandel Screen Manufacturing Co. at Walpole, Mass., where he made the famous Wandel Rotary Screens. In 1913 he sold his interests to Bird & Son, who are still carrying on this business under their own name, and went into paper manufacturing at Swarthmore, Pa., and elsewhere. His last connection with the paper industry was as consulting engineer for the Bayless Manufacturing Company of Austin, Pa.

Mr. Wandel was an expert paper maker and chemist, but upon joining the big Susquehanna Silk Company to whom he made himself invaluable, he definitely severed all bonds with the paper making industry. Mr. Wandel had many friends elsewhere. He was beloved by the men who worked for him and his unselfishness and kindliness endeared him to all who came in contact with him. He was a member of several Masonic Lodges and of the Susquehanna Valley Country Club. He is survived by his widow, Mrs. Lily Wandel, as well as by three brothers in America and one sister in the Argentine. Kurt Wandel, New York City, a consulting paper making engineer, is one of his brothers.

DEVELOPMENTS ON COAST

(*Continued from page 23*)

There the Hawley Pulp and Paper Company has four machines on news print, wrappings, towel and like grades of paper. The Crown-Willamette Paper Company operates a 60-ton ground wood plant adjacent to the Hawley mill. Across the Willamette River the Crown Willamette Paper Company has the largest capacity paper plant in this region—350 tons of news print daily from nine machines.

At Newberg, Oregon, the Spaulding Pulp and Paper Company is building a 50-ton sulphite pulp mill.

A four-machine plant of the Columbia River Paper Mills Company at Salem is producing bond and glassine paper. It has been operating only a very few years.

At Lebanon, Oregon, the Crown-Willamette Paper Company has a small plant producing a fine grade of sulphite wrapping paper from white fir wood chiefly.

St. Helens Pulp & Paper Co.

The newest kraft wrapping paper production plant is the St. Helens Pulp and Paper Company's 50-ton mill, which is planning to double its capacity. This plant, at St. Helens, has been operating since last year and is credited with producing the best quality of kraft paper on the Pacific Coast.

At Astoria, the Astoria Box and Paper Company soon will build a 50-ton sulphite pulp mill. There, also, the Northwestern Pulp and Paper Company will build a sulphite pulp mill of 120 tons daily capacity and a sawmill to cut 300,000 feet daily of hemlock timber. The plants are being prepared by B. T. McBain and Henry M. Ford, Portland.

On Willapa Harbor, one and possibly two sulphite mills will be built soon by sawmilling companies operating in that area.

Pulp and Paper Mills in Prospect

Pulp and paper mills are in prospect at Toledo, Wheeler, St. Helens, Rainier, Dallas, Eugene, Albanp and at other points in Western Oregon, according to Mr. McBain. All of these will add enormously to this state's payroll industries and swell Oregon's yearly production of one of its basic industries.

In California are many converting plants making board, roofing and wrapping products and some making fruit wrap; but no pulp mills are included, so these plants are good prospective customers for some of the new pulp mills soon to be built and now building.

News of the Boston Paper Trade

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 21, 1927.—Edward M. Davenport, treasurer of the Spaulding and Tewksbury Company, has returned from a two months' business and pleasure trip to England and the Continent, including London and several places of interest in France, Belgium, and Hollond. Mr. Davenport was accompanied by Mrs. Davenport.

Hubert L. Carter, treasurer of the Carter, Rice & Co., Corp., has returned from a business trip to Chicago.

John Carter & Co., Inc., are handling a new line which the Hazen Paper Company, Holyoke, Mass., has recently placed on the market. It is called Sherwood Papers, is on imitation of wood grain, and a companion line to the same company's Birch Bark Paper, sold under the name of King Philip Papers by John Carter & Co.

Percy D. Wells has become distributor of Waterfalls Mimeograph Bond and Waterfalls Offset Papers.

Colonel Edgar Smalley, managing director of Edwin Butterworth, Ltd., of Manchester and Liverpool, England, and Ghent, Belgium, arrived last week on the *Baltic* for his annual business trip in this country.

"Henry Ford's Methods Do Not Apply to Job Printing" is the subject of the "middle spread" article in the July number of "How," published by Tileston & Hollingsworth and edited by A. V. Howland. The theme of the story is that not all industries can be run on the Ford basis of mass production and narrow margin of profits and that to operate a job printing plant on this basis is absurd.

Boston Paper Market Quiet

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 25, 1927.—Stability in the paper market here prevails, although the market generally is quiet. In bonds and ledgers there is a slightly improved demand, but prices remain the same. Many of the paper mills are running short time. It is expected, however, that operation will be on a large scale by September 1. The box board market is holding fairly well for the season. Prices continue firm, and jobbers are hoping that they will continue at the present levels. Naturally it is not to their advantage to have prices cut by the mills.

The paper stock market shows no marked change. A prominent Chicago firm is reported to be permanently out of the market for roofing stock on account of financial troubles. This concern had been a steady buyer in Chelsea, Mass., and it is possible that the change may make a difference to the volume of business in this commodity in that market.

Lowe Paper Co. Announces Vacation Shut Down

RIDGEFIELD, N. J., July 11, 1927.—The Lowe Paper Company has sent out the following notice announcing its vacation shutdown: "Our board mill and coating plant, including all departments, will be close during the week of August 29 to September 5, 1927.

"In order that the embarrassment of this arrangement may be held to a minimum, we would be glad to have you anticipate your needs as much as possible. We will not be in position to manufacture any orders or make any shipments during this time.

What Do You Pay For POWER?

It's a pretty big item, and one that you would be glad to cut in half. We can do this for you in your Beater Room and at the same time Double your production, give you more uniform stock and save time and labor as well.

The GRILEY-UNKLE EXTRACTOR

the foremost continuous beating system built, will revolutionize your beater room—it will stop waste and increase profits. Send coupon below—one of our engineers will gladly show you how these savings are possible.

The Griley-Unkle Engineering Co.

FORT WAYNE, INDIANA

Western Representatives
A. H. Cox Company, Inc.
1757 First Ave., South
Seattle, Washington

Eastern Representatives
E. K. Mansfield Company
501 Fifth Avenue,
New York City

Griley-Unkle Engineering Co.,
Fort Wayne, Indiana

Gentlemen:
Without obligation have one of your engineers look over our beater room with the idea of saving us money if possible.

Name & Title .....

Firm .....

Address .....

New York Trade Jottings

L. A. Jonte, chief engineer of the Hoberg Paper and Fibre Company, Green Bay, Wis., visited New York last week.

* * *

L. M. Alexander, president of the Nekoosa-Edwards Paper Company, Inc., Nekoosa, Wis., was a prominent New York visitor last week.

* * *

The American Paper and Pulp Association is giving its moral support to the campaign of the National Association of Book Publishers for lower postal rates on books.

* * *

The Binders Board Manufacturers Association, with headquarters at 18 East 41st street, New York, held a successful meeting on Tuesday at the Orienta Beach Club, Mamaroneck, N. Y.

* * *

General Electric Company reports for the six months ended June net profit of $23,830,162, after all charges and dividends on the special stock. That was equal to $3.12 a share earned on 7,211,481 no-par shares of common stock and compares with $20,070,923, or $2.63 a share, in first six months of 1926. Net profit for the June quarter was $12,158,431, after above charges, equal to $1.59 a share, compared with $11,671,731 or $1.53 a share, in preceding quarter.

* * *

Due to the serious illness of Secretary M. C. Warwick, of the Glazed and Fancy Paper Manufacturers Association, O. M. Porter, assistant secretary of the American Paper and Pulp Association, is taking over his work temporarily. The next meeting of the Glazed and Fancy Paper Manufacturers Association is to be held at Hamilton, Ont., on August 10. Special preparations are going forward rapidly for the entertainment of the many visitors who are expected to come from the United States.

* * *

Texas Gulf Sulphur Company, Inc., in the June quarter earned $3,262,277 after depreciation and federal taxes, but before depletion, equivalent to $1.28 a share earned on 2,540,000 shares of no par stock. That with $2,854,631, or $1.12 a share in preceding quarter and $1,859,918, or 73 cents a share in the second quarter of 1926. Net for the six months totalled $6,116,908 before depletion, equal to $2.40 a share, against $3,790,542, or $1.49 a share, on same share basis in the first half of previous year.

* * *

Net income of the Corn Products Refining Company for the six months ended June 30 totaled $5,552,267, an increase of $111,086 over the same period last year. This represented earnings equivalent to after all 7 per cent dividend requirements of $1.85 a share on the 2,530,000 shares of common, par value $25. For the second quarter of the year net income totaled $2,814,489, after all charges, this being equivalent to 94 cents on the common, compared with $2,737,778, or 90 cents a share in the preceding quarter.

* * *

The Mid-States Gummed Paper Company, of New York, Inc., has been incorporated with a capital of 200 shares of stock, no par value, to manufacture gummed and other specialty paper products. This corporation is to act as a sales agency for the Mid-States Gummed Paper Company, of Chicago, of which it is a subsidiary. George Goodsir, vice-president of both corporations, is in charge in their new office in the Park-Murray Building, 9 Park Place, New York. The company is represented by Bradford Butler, 41 Park Row, New York, attorney.

To Start Paper Making School at Holyoke

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 25, 1927.—This city will be the first of several throughout the country where the International Brotherhood of Papermakers will establish schools in papermaking and members of the International Committee who met here Sunday at the Nonotuck with officials of the various paper mills and school committee members will furnish the local Eagle Lodge with a report on the subject later on this year.

According to local officers it is understood that the city will be one of the first in the country to establish schools with the aid of the local school committee in courses in papermaking with the view of giving men now employed at that industry an opportunity of increasing their knowledge and further advancing themselves in that industry.

Members here were International Vice-President Frank Barry and International Secretary Matthew Burns along with members of a special International Committee. Edward S. Alden and Urban Fleming of the Central Labor Union, John J. Bresnahan, chairman of the school committee, and Adam Wilkinson, labor commissioner of the A. W. P. Co.

Papermaking was a subject undertaken here several years ago as a course of study by Eagle Lodge. It proved quite successful for a period but then slowly petered out. The University Extension Course in this field last year drew a great number of students so that the International Brotherhood of Papermakers became much interested in the movement and the hope of the committee is to carry out the plan in other paper manufacturing centers of the country.

Heads H. W. Butterworth & Sons Co.

After twenty-one years as president and active head of H. W. Butterworth & Sons Company, Harry W. Butterworth, Sr., great grandson of the founder of the calender roll business, which has borne the name Butterworth for 120 years, was elected chairman of the board of directors, a newly created office.

The election of the former president of the company to the chairman of the board, was followed by the election of A. W. Butterworth, former vice-president, to the presidency of the company. He also was made treasurer. J. Ebert Butterworth, formerly treasurer of the company, was elected vice-president in charge of the southern office located at Charlotte, N. C. Harry W. Butterworth, Jr., was also elected a vice-president—he formerly was secretary. DeHaven Butterworth, who had been assistant secretary, was made sacretary, and James W. Butterworth, 2nd, continued as assistant treasurer. The only other office remaining unchanged was that of vice-president in charge of the New England office. A. C. Freeman was elected to this office several years ago, and has held it since.

These changes were effective July 1, the elections being held at the regular meeting of the company's officers.

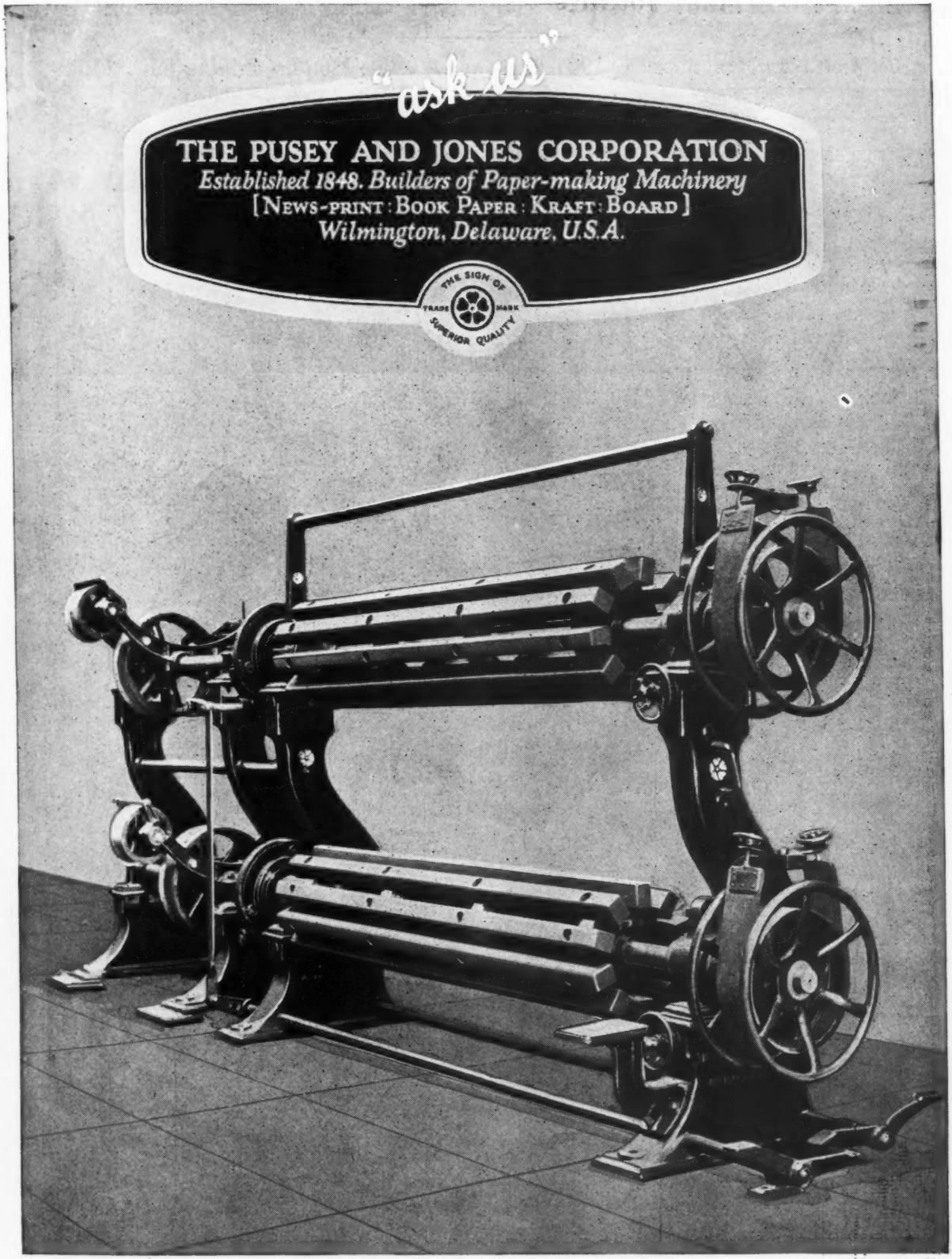
Want Increase in Tariff on Textile Tubes

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 27, 1927.—An application has been filed with the United States Tariff Commission for an increase in so-called textile tubes made of paper or pulp of 50 per cent, the maximum allowable under the flexible provisions of the Tariff Act. The present rate of duty is 35 per cent.

The application is now in the hands of Franklin H. Smith, chief of the paper and lumber division of the Commission and he is making a preliminary survey so that a report can be made to the Commission when it reconvenes in the autumn. It is possible that he may have to go into the field to get some information.

Principal imports into the United States are from Germany and France and the application for the increase is from domestic manufacturers whose names are withheld in accordance with the regular procedure of the Commission.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Established 1848. Builders of Paper-making Machinery
[NEWS-PRINT : BOOK PAPER : KRAFT : BOARD]
Wilmington, Delaware, U.S.A.
THE SIGN OF TRADE MARK SUPERIOR QUALITY

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PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending May 31, 1927 and for the Five Months Ending May 31, 1927, as Compared with Corresponding Months of Previous Year

IMPORTS—PAPER

	May				Five Months Ending May 31			
	1926		1927		1926		1927	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Paper and manufactures (total)	.....	$10,218,981	.....	$12,575,523	.....	$55,053,575	.....	$58,507,098
Printing paper—								
Standard news print ....lbs...free	269,739,762	9,018,363	341,089,187	11,265,134	1,443,810,013	48,713,088	1,570,046,117	51,960,507
Imported from—								
Finland	8,250,289	237,872	6,674,079	181,835	25,607,966	757,720	26,855,047	762,190
Germany	1,603,475	47,855	1,183,207	33,514	19,821,323	586,054	6,448,996	197,401
Norway	227,896	6,513	2,186,441	58,998	1,506,234	44,922	14,632,623	395,058
Sweden	2,756,163	83,541	12,251,741	353,298	32,170,371	993,482	61,645,951	1,784,590
Canada	255,157,989	8,587,698	299,222,835	10,002,225	1,344,463,774	45,681,375	1,426,125,422	47,669,788
Newfoundland and Labrador	1,719,129	54,000	19,500,835	633,082	19,603,330	627,857	33,940,987	1,139,354
Other countries	24,821	884	70,049	2,152	637,015	21,678	397,091	12,126
All other, n. e. s.....lbs...dut.	2,440,944	115,437	963,329	50,773	7,140,052	360,192	4,515,306	221,867
Grease-proof and waterproof papers..lbs...dut.	120,246	26,158	200,128	30,332	984,918	164,749	772,561	134,780
Kraft wrapping paper .....lbs...dut.	510,017	21,999	1,018,059	43,474	3,486,382	149,639	3,374,032	150,080
All other wrapping paper .....lbs...dut.	644,601	33,068	189,053	14,964	2,286,112	174,561	2,027,112	104,792
Writing, drawing, bond, etc.....lbs...dut.	288,083	72,764	233,165	61,698	1,554,801	330,781	1,135,064	272,161
Surface coated .....lbs...dut.	238,110	75,157	220,532	91,970	850,080	315,646	852,542	340,316
Tissue paper .....lbs...dut.	167,057	89,102	259,593	149,567	1,180,890	539,625	1,312,988	740,038
Pulp boards in rolls.....lbs...dut.	7,229,038	173,919	6,938,023	169,685	34,816,017	847,841	27,023,788	661,779
Other paper boards, n. e. s.....lbs...dut.	.....	87,156	.....	61,738	.....	341,411	.....	400,247
Cigarette paper, cigarette books, and covers .....lbs...dut.	494,549	123,045	825,178	225,204	3,179,152	847,233	4,051,426	1,153,035
Hanging paper .....lbs...dut.	134,509	27,975	246,945	59,358	1,520,717	274,000	1,369,690	318,123
Paper boxes .....lbs...dut.	106,940	47,989	128,861	83,668	832,809	398,352	989,850	545,000
Pulp or papier-mâché and manufactures of, n. e. s. .....lbs...dut.	92,575	21,580	63,874	17,797	960,042	162,225	914,114	156,428
Duplex decalcomania, not printed....lbs...free	45,482	10,997	64,523	15,095	242,251	60,931	317,940	68,879
All other .....dut.	.....	274,272	.....	235,066	.....	1,373,301	.....	1,279,066

WOOD PULP

Mechanically ground wood pulp.....tons..free	17,078	523,151	15,372	465,754	96,153	2,858,499	81,997	2,378,704
Sulphite wood pulp .....tons	66,823	4,379,102	77,351	4,963,432	354,265	23,432,260	354,678	23,289,853
Unbleached .....tons..free	47,254	2,772,374	46,801	2,616,047	234,579	13,686,845	223,407	12,925,138
Bleached .....tons..free	19,569	1,606,728	30,550	2,347,385	119,686	9,805,415	131,201	10,364,715
Imported from—								
Finland	4,726	262,838	10,264	551,543	23,992	1,307,819	36,550	1,977,692
Germany	8,499	534,756	3,266	243,424	35,957	2,416,671	26,206	1,882,049
Norway	4,704	379,714	6,326	480,865	30,042	2,437,077	28,419	2,180,667
Sweden	14,666	909,094	21,330	1,316,625	80,512	4,968,273	109,445	6,816,030
Canada	33,423	2,247,382	32,397	2,122,330	169,228	11,538,115	137,485	9,363,166
Other countries	805	45,318	3,768	248,645	14,534	824,305	16,573	1,070,249
Sulphate wood pulp, unbleached (Kraft pulp) .....tons..free	27,371	1,775,875	27,010	1,752,212	116,552	7,442,785	120,030	7,608,049
Imported from—								
Finland	3,540	209,234	205	11,155	10,670	610,735	3,945	222,206
Norway	2,025	130,648	578	35,869	4,666	303,478	3,901	237,885
Sweden	10,781	698,724	15,038	959,817	40,133	2,468,030	56,846	3,515,485
Canada	10,903	730,666	10,962	726,754	59,027	3,937,407	54,732	3,591,927
Other countries	122	6,003	227	18,617	2,056	123,135	606	40,546
Sulphate wood pulp, bleached.....tons..free	672	41,122	25	1,636	5,163	350,932	7,208	479,295
Other pulp .....tons..free	266	20,560	58	1,893	813	46,780	743	57,410

CRUDE PAPER STOCK

Rags for paper stock.....lbs...free	29,067,174	648,097	24,989,825	516,562	217,836,992	5,087,941	153,964,769	3,278,480
Waste bagging, waste paper, etc....lbs...free	9,363,203	192,496	7,843,322	102,125	55,223,564	1,147,784	32,581,290	452,180
Old rope and all other paper stock....lbs...free	6,635,966	250,055	4,719,681	169,425	33,885,768	1,569,533	23,186,141	777,667

CHEMICALS AND OTHER PAPER MAKERS' MATERIALS

Colors, dyes, stains, color acids, and color bases, n. e. s.....lbs...dut.	553,492	608,600	315,533	355,494	1,948,367	2,184,959	2,972,377	3,329,614
Imported from—								
Belgium	26,036	39,761	9,957	14,351	99,611	152,263	95,522	140,724
France	3,007	4,875	13,546	15,091	91,851	123,033	94,760	109,659
Germany	358,723	351,337	201,177	214,313	840,585	868,669	1,909,034	2,027,587
Italy	5,502	5,410	3,886	4,361	40,516	42,371	53,228	63,047
Switzerland	140,035	183,415	71,103	91,370	766,276	876,714	683,689	852,362
United Kingdom	12,029	11,268	13,090	12,312	71,994	68,723	94,317	90,081
Other countries	8,160	12,534	2,774	3,696	37,534	53,186	41,827	46,154
Casein or lactarene .....lbs...dut.	3,088,971	320,901	2,543,061	311,407	12,573,861	1,146,754	13,058,759	1,548,239
Kaolin, china, and paper clay.....tons..dut.	35,750	340,236	28,746	286,820	150,996	1,493,841	125,458	1,236,236

(*Continued on page 40*)

Builders of High Class

PAPER MAKING MACHINERY

I. P. Morris and Pelton Hydraulic Turbines and Accessories.

Modern High Speed Newsprint Machines embodying the following Special Features:

Van de Carr Slices.

Oscillating Suction Boxes.

Beloit Type Removable Fourdrinier

Suction Couch Rolls (Millspaugh Type)

First and Second Suction Press Rolls (Millspaugh Type)

Canadian Granite Top Press Rolls

Patented Internal Cantilever Anti-friction bearings for Table, Wire and Wet Felt Rolls.

Special Mechanism for driving Dryers, assuring safe running at high speeds.

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DOMINION ENGINEERING WORKS LIMITED

MONTREAL · CANADA

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

(*Continued from page 38*)

EXPORTS—PAPER

	May				Five Months Ending May 31			
	1926		1927		1926		1927	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Paper and manufactures (total)	.....	$2,201,301	.....	$2,159,740	.....	$11,309,963	.....	$11,340,220
Printing paper—								
News print paper ..... lbs.	3,806,614	179,251	2,627,198	128,340	19,334,930	912,482	12,536,359	587,551
Exported to—								
Canada ..... lbs.	60,224	3,285	519,305	31,436	593,132	42,805	1,606,993	100,985
Central America ..... lbs.	133,094	6,855	99,991	5,238	745,863	34,030	303,891	15,188
Mexico ..... lbs.	86,584	3,963	70,743	3,039	510,698	26,577	298,463	12,966
Cuba ..... lbs.	569,728	26,175	462,034	21,864	3,400,749	146,724	2,276,729	106,109
South America ..... lbs.	752,229	34,792	740,786	31,328	4,198,730	193,901	2,958,593	124,321
China, Hongkong, and Kwan ung .... lbs.	839,445	40,624	3,000	400	4,157,652	194,205	289,120	17,051
Japan ..... lbs.	383,565	16,196	.....	.....	1,669,702	74,923	58,547	3,602
Philippine Islands ..... lbs.	890,427	43,301	531,003	21,633	3,078,406	148,237	3,995,327	159,325
Other countries ..... lbs.	86,318	4,060	200,336	13,402	979,998	51,080	748,696	48,004
Book paper, not coated ..... lbs.	1,677,023	147,874	1,242,090	111,932	6,985,109	673,006	6,366,516	553,544
Exported to—								
United Kingdom ..... lbs.	58,805	5,703	113,923	8,213	81,420	9,241	192,394	14,191
Canada ..... lbs.	677,926	49,653	304,000	27,657	1,686,841	157,565	1,450,474	122,867
Central America ..... lbs.	51,214	5,567	26,181	2,617	288,338	31,981	134,945	13,471
Mexico ..... lbs.	100,562	10,936	35,077	3,665	720,744	73,732	206,532	22,352
Cuba ..... lbs.	113,254	9,342	222,271	18,767	953,342	89,182	830,535	72,279
Argentina ..... lbs.	37,588	2,760	56,613	4,821	263,720	24,332	396,190	31,796
Other South America ..... lbs.	88,347	8,472	40,848	3,958	675,135	69,170	1,006,992	72,357
China, Hongkong, and Kwantung .... lbs.	32,556	7,207	6,449	1,692	608,987	56,020	291,741	31,349
Philippine Islands ..... lbs.	236,362	21,683	255,533	19,162	826,242	71,806	641,358	53,239
Australia ..... lbs.	22,259	3,118	123,312	14,400	195,289	21,092	419,677	44,177
Other countries ..... lbs.	258,150	23,433	57,883	6,980	685,051	68,885	795,678	75,466
Cover paper ..... lbs.	78,012	14,556	181,322	25,964	603,197	105,960	681,822	117,810
Grease proof and waterproof paper..... lbs.	303,711	37,198	295,844	40,804	1,043,335	153,436	1,057,003	148,429
Wrapping paper ..... lbs.	3,018,213	166,989	1,850,236	146,222	14,100,054	997,514	12,853,270	931,452
Surface coated paper ..... lbs.	483,620	65,800	567,627	67,177	3,161,614	376,091	2,988,244	370,358
Tissue and crêpe paper ..... lbs.	322,929	81,531	336,200	84,796	1,556,408	404,244	1,722,020	389,363
Toilet paper ..... lbs	345,391	39,499	411,864	50,847	2,032,110	251,470	2,104,839	276,285
Paper towels and napkins ..... lbs.	152,541	23,308	139,159	20,343	802,614	113,129	840,481	115,915
Box board ..... lbs.	4,098,841	120,975	3,815,765	126,554	19,083,053	546,918	20,173,671	633,864
Bristols and bristol board..... lbs.	191,167	16,996	149,398	17,041	628,388	80,054	1,003,117	85,843
Other paper board and straw board..... lbs.	3,502,967	164,192	3,123,823	143,539	16,022,857	832,686	16,477,942	840,795
Sheathing and building paper..... lbs.	879,746	34,810	1,089,308	46,348	4,424,219	196,198	5,794,060	234,924
Wall board of paper or pulp..... sq. ft.	2,501,561	85,043	3,227,755	88,606	8,729,992	289,946	18,581,569	609,219
Blotting paper ..... lbs.	276,586	32,821	287,528	31,884	1,422,509	183,700	1,428,861	163,373
Filing folders, index cards, and other office forms ..... lbs.	50,659	16,000	64,175	21,927	374,095	104,055	483,123	129,215
Papeteries (fancy writing paper)..... lbs.	42,119	12,104	61,158	12,597	219,759	77,153	252,868	61,530
Other writing paper ..... lbs.	792,150	131,961	1,474,558	191,300	3,975,310	681,795	4,884,491	789,615
Paper hangings (wall paper)..... yds.	1,711,094	44,321	1,742,857	47,113	14,304,522	336,237	14,275,879	317,279
Paper bags ..... lbs.	859,861	72,720	763,715	65,435	5,135,518	458,684	5,883,237	503,084
Boxes and cartons..... lbs.	1,500,180	105,853	2,446,172	164,926	8,267,739	572,529	9,090,975	616,629
Envelopes ..... lbs.	232,047	40,352	228,674	41,156	1,092,421	203,079	1,133,540	196,939
Vulcanized fiber sheets, strips, rods, and tubes ..... lbs.	602,110	169,154	310,365	85,302	2,629,184	748,366	2,017,076	606,107
Manufactures of vulcanized and indurate fiber ..... lbs.	57,013	15,645	48,920	13,402	204,713	64,356	411,134	76,773
Cash register and adding machine paper.... lbs.	180,906	18,072	158,890	16,195	753,461	79,146	674,870	72,665
Other paper and paper products	.....	362,276	.....	369,990	.....	1,867,729	.....	1,911,659

WOOD PULP AND PAPER STOCK

Sulphite wood pulp ..... tons	2,014	125,657	695	47,980	9,315	617,348	7,305	451,711
Soda wood pulp ..... tons	78	6,717	256	20,379	864	76,052	855	75,214
Other wood pulp ..... tons	1,314	54,407	1,020	28,130	3,338	389,531	1,710	59,125
Rags and other paper stock..... lbs.	15,710,403	212,457	22,434,052	490,534	82,535,171	1,174,039	90,943,438	1,503,742

PAPER AND PULP MILL MACHINERY

Paper and pulp mill machinery..... lbs.	1,119,923	208,487	1,499,367	307,952	4,558,252	1,137,298	9,926,499	1,995,672

To Discuss Engineering in Graphic Arts

Engineering in Graphic Arts is to be discussed at a National Meeting Luncheon at the Hotel Commodore, New York City, on September 14 during the Graphic Arts Exposition. The meeting is being held under the auspices of the Printing Machinery Division of the American Society of Mechanical Engineers. A cordial invitation is being extended to all interested in graphic arts by William C. Glass, Chairman of the Printing Machinery Division.

The meeting gives promise of being one of exceptional interest and value. It marks another step in the steady progress of engineering societies to aid industry by focusing attention on the aid engineering gives and the kind of engineering education industry needs and desires. The American Society of Mechanical Engineers has played a prominent part in this work and its Standing Committee on Education and Training for the Industries has been making a study of training of foremen and apprentices. At the Society's Spring Meeting at White Sulphur Springs, May 23-26, this Committee presented papers on The General Motors Institute of Technology at Flint, Michigan, and the Henry Ford Trade Schools.

The A.S.M.E. is also a sponsor of The Society for Promotion of Engineering Education.

Local Committee of Arrangements for the luncheon are Edward Pierce Hulse, Chairman, Edward E. Bartlett, William M. Kelly, W. E. Wines, James J. Phalen and John H. Williams.

BRONZE PIPE FITTINGS

for *Resistance to Acids* used in Paper Making

We manufacture a complete line of Pipe Fittings for resistance to various Commercial Acids. These fittings are available in screwed and flanged patterns.

For years we have "Specialized" in the production of various non-ferrous alloys to meet the destructive effect of Commercial Acids used in the "process industries". This broad experience enables us to recommend the "best metal" for each particular condition.

NOTE—We manufacture regularly and in quantity, Red Brass, Flat Band Fittings, Flanges and Flanged Unions—standard and extra heavy, for use with Steam, Water, Gas and Oil, also Hydraulic Bronze Fittings, 250 pounds to 1500 pounds pressure at 500° F.

Literature and Details upon Request

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PAPER EXPORTS SHOW DECREASE

Exports of paper and paper products from the United States during May again underwent a slight decline both as compared with April and with May, 1926, according to the Paper Division of the Department of Commerce.

Shipments of news print and book paper show an improvement over the preceding month, although failing to attain the volume of the same month last year, and shipments of surface-coated and writing papers were larger than either of the other two months, but gains in these lines were more than offset by declines in exports of other fine papers, wrapping papers, a number of specialties, and boards. The heaviest decrease occurred in shipments of wrapping paper which were 30 per cent lower than during April and 40 per cent lower than during May of last year. As compared with the latter month, exports of news print show a loss of 30 per cent and of book paper 25 per cent, while exceeding the April shipments by 20 per cent and 10 per cent respectively.

Total exports of paper and paper products during May were valued at $2,159,740 as against $2,361,841 during April and $2,201,301 during May, 1926. In addition to paper and paper products there was an exportation of $619,273 worth of paper base stocks during May, nearly 80 per cent of which comprised rags and materials other than wood pulp.

The United States' imports of paper and paper making stocks during May were on the whole higher than during either of the other two months under comparison. The heaviest increase took place in incoming shipments of news print, which show a rise from 120,415 tons (long ton of 2,240 pounds) in May, 1926, to 131,907 tons during April, and 152,272 tons during May past. Imports of other classes of paper show a slight gain over the corresponding month last year but a decline of 15 per cent compared with April, the increase in receipts of wrapping and surface-coated papers and pulpboards being insufficient to offset the reduction in receipts of writing, tissue, and cigarette papers, and a few other lines. Of total imports valued at $12,575,523 nearly 90 per cent comprise news print.

In receipts of paper base stocks, imports of most classes during May show a loss as compared with the preceding month and during the same month last year. Increased receipts of bleached sulphite pulp as compared with May, 1926, and of bleached and unbleached sulphite pulp, kraft pulp, and waste paper and bagging, however, enabled imports of this group as a whole to show a gain of 2 per cent over the former and 20 per cent over the latter month. Total receipts of base stocks were valued at $8,864,944, of which $819,905 represented pulpwood, $7,183,034 wood pulp, and $790,005 other stocks.

NEWS PRINT IN WESTERN CANADA

News print manufacture continues to increase in Canada as new mills steadily spring up, according to a bulletin just issued by the Canadian Pacific Railway. Fourteen new news print machines, set up in 1926, accounted for an increase of 1,215 tons per day in production, and twenty-two additional mills scheduled for 1927 are to add a further 2,315 tons per day, according to the bulletin. The news print industry has long been established and rapidly expanded in all the Eastern Provinces. It sprang up and saw similar growth in British Columbia. Now the forests of the Prairie Provinces are being called upon to furnish raw material for news print demands.

"One of the most outstanding recent items of interest in the Canadian news print industry is the application before the Federal Government for a pulpwood berth on the Nelson River in Manitoba capable of supplying a news print mill of 400 tons per day," the bulletin continues. "This lies contibuous to the Hudson Bay Railway, being between the Nelson River and Lake Winnipeg, and is the second berth sought in the Province of Manitoba. The Manitoba Paper Company already has obtained a berth with 6,000,000 cords of wood on the east side of Lake Winnipeg, and has built a mill at Pine Falls with a capacity of 100 tons per day, described as the largest industrial enterprise in the Province.

"A 400-ton per day mill, according to experts, will require a berth containing at least 8,000,000 cords of pulpwood. Power for the mill will be obtained from White Mud Falls on the Nelson River, one of the greatest power sites in the Dominion. An option on these falls, it is understood, has been secured by the financial group behind the new pulpwood application. The falls are, in fact, capable of furnishing a great deal more power than the mill will need, and this is expected to be utilized by the growing mining area north and east, and thus further Manitoba's mining development at the same time.

"The founding of a second news print mill in Manitoba would mean a great deal to the Province, not only in its intrinsic but also tributary activity. A 400-ton mill would necessitate an outlay of about $8,000,000, and the development of White Mud Falls would require considerable additional capital. The mill would find employment for 2,000 men, and apparently surpass in volume of output any of Manitoba's present industrial enterprises.

"This projection draws further forcible attention to the timber possessions of the Prairie Provindences which in this respect belie their name. The lumber industry has long thrived there in all three Provinces and its production goes no inconsiderable way to meet domestic requirements. The news print industry is rapidly going to them. Manitoba is about 70 per cent wooded and the Province has been estimated to contain 1,920,000 feet of saw timber, or 4,000,000 board measure. In the sister Province of Saskatchewan the area actually timbered with merchantable trees is about 750,000 acres. The Province of Alberta is estimated to

contain about 21,000,000,000 feet of saw timber. Altogether the Prairie Provinces contain about 8,000,000 acres of commercial timber lands, and there are in addition large resources of pulpwood upon which no really accurate estimate has been made."

International Paper Co. 6s Attract Traders

In the present market convertible bonds and those carrying stock warrants are developing increased popularity day by day, partly because the general run of industrial issues is selling at the lowest yields in a decade and also becouse investors are becoming more versed in the speculative features of bonds that give them opportunities for profits aside from the fixed return, says the *Wall Street Journal*.

"International Paper Company convertible debenture 6s, due October 1, 1941, have a rather novel convertible feature; they may be converted into 7 per cent cumulative preferred stock at the rate of 1 share, par value $100, for each $100 principal amount of debenture bonds. In others words, the bonds are convertible into 7 per cent preferred stock on a basis of par for par to and including the date of maturity of the bonds.

In addition to this privilege, the holders who convert on or before October 1, 1928, have the right to purchase common stock at $40 a share on the basis of two shares of common stock for each $1,000 principal amount of bonds so converted. As the common stock is now selling around $50, the rights to purchase common shares under this plan have market value.

The directors of the company may in their discretion extend the time during which common stock may be purchased by holders of the debentures and also may fix the price, terms and conditions upon which such purchases may be made during such extended period or periods. The 6 per cent convertible debenture bonds are redeemable on the first day of any month on 30 days notice at 102½ through October 1, 1929; at 102 through October 1, 1932; and 101½ through October, 1938; and 100½ thereafter prior to maturity, including interest in all cases.

International Paper convertible 6s were issued on October, 1926, in amount of $25,000,000 and offered at 98 and interest. They now are selling around 101, to give a direct return of about 5.94 per cent. This yield is generous in the current market. Although these bonds are not secured by a mortgage and are subject to approximately $44,437,000 prior liens, the strength of the company in assets and earning power seems to justify a fair rating. Company always earning its fixed charges by a substantial margin and at present is paying dividends on the preferred and common stocks.

To Distribute Cumberland Gummed Paper

CLEVELAND, Ohio, July 25, 1927.—Announcement is made that the Alling & Cory Company, Cleveland, Ohio, successors to the Kingsley Paper Company, of Cleveland, has taken on the distribution of Cumberland Gummed Paper. The company will stock it in two sizes—17x22 and 20x25.

Cumberland Gummed Paper is gummed by the Mid-States Gummed Paper Company of Chicago, while the paper itself is made by the S. D. Warren Company, of Boston, Mass. The number is handled exclusively by Warren agents throughout the United States.

A. J. Lewthwaite Recovering From Fall

PORTLAND, Ore., July 22, 1927.—A. J. Lewthwaite, vice-president and resident manager of the Crown-Willamette Paper Company in Portland, Ore., has been seriously ill in the hospital from a fall sustained in his home a week ago. His condition has been critical but he is now reported to be improved and on the road to recovery. He has just completed a beautiful $40,000 home on Montgomery drive in Portland.

Norwegian Wood Pulp Unloaded at Chicago

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., July 19, 1927.—Fifteen hundred and fifty tons of Canadian spruce wood pulp were being unloaded today from the Norwegian freighter *Biskra* from Oslo on the north pier terminal docks along the Ogden slip.

The shipment came down the Great Lakes from Port Alfred, Canada, in the vicinity of Montreal, near where the wood pulp was made. Earlier this year shipments direct from Oslo and Sarpsborg, Norway, were received for the first time.

The wood pulp was consigned to the Waterway Paper Products Company, a subsidiary of the *Daily News*, which concern manufactures paper in a large, modern plant at 32d street and Kedzie avenue. Three more shipments from Canada are expected this summer and possibly some more from Norway.

The freighter was met by D. H. Mendelson, vice-president and secretary of the Waterway Paper Products Company. It had left England on April 26 for Montreal with coal, after which it picked up the wood pulp. Captain Steinert expects to take grain back; he will bring all of the three other Canadian shipments of pulp.

The 1,550 tons of wood pulp, glistening white, will make only about 700 tons of paper because of the high water content, Mr. Mendelson explained.

"The *Daily News* in this way is bringing the paper mill industry right into Chicago," he said. "It is helping make Chicago a real seaport. Further, it is taking advantage of foreign markets and at certain times when prices are high it can substitute waste paper, making the proposition more flexible. It is able in this way to buy in bulk, thereby saving on the freight rate. The *Daily News* was the first Chicago paper to try this method of obtaining its paper. This is the fourth year of its operation."

The Waterway Paper Products Company has one of the widest, fastest running paper machines in the United States. Walter A. Strong, publisher of the *Daily News*, is chairman of its board of directors and E. M. Mendelson is president and treasurer.

Second Unit in Farmers Powerhouse Turned Over

The second unit in the Farmers, Quebec, powerhouse of the Gatineau Power Company has been turned over and is now in operation. This unit and the first unit, which was started on May 8, are supplying power to the Gatineau news print mill of Canadian International Power Company, a few miles away. The mill is also receiving power from three units in the Chelsea powerhouse of Gatineau Power Company, a mile above Farmers, the two plants operating in parallel.

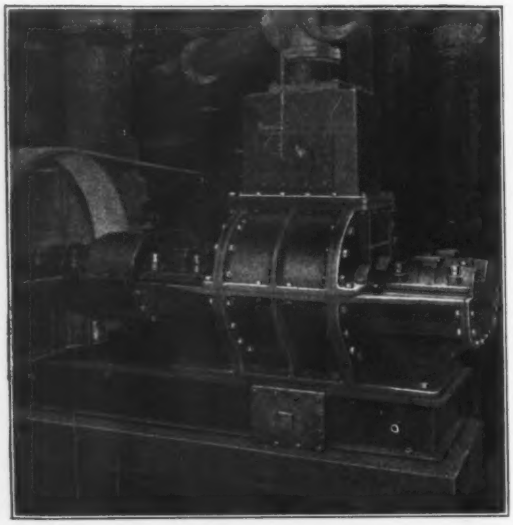
Work on the Farmers hydro-electric development was commenced in January, 1926, and was carried on continuously through the winter months. At the height of the construction work on the Chelsea and Farmers developments and the Gatineau paper mill, about 6,500 men were employed.

Gatineau Power Company, a subsidiary of International Paper Company, and affiliated companies now own distribution lines serving substantially all the territory between Hull and Montreal, and extending north and east to St. Jerome, St. Lin, and Rawdon.

To Build Paper Mill at Kelso, Wash.

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., July 22, 1927.—The Kelso Paper Company, Kelso, Wash., will erect a modern paper mill at North Kelso on the Cowlitz River, it has been announced by P. J. Gallagher, attorney of Portland, who is representing the paper company in a request for the city council of Kelso to trade a tract of land concerned in the deal. If this transfer can be made legal documents will immediately be completed for the actual construction of a modern plant to cost probably $100,000 to $150,000, with a 30-ton daily capacity.



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Power Economy under Normal Operating Conditions

5″ to 16″ mercury is the range of suctions in at least 80% of the flat box, felt conditioner, vacuum filter, and suction roll service in paper mills. The careful manager is consequently interested in pumps that show the greatest economies under these conditions.

In this range of vacuums, most common in paper mill operation, Connersville Cycloidal Pumps use less power. Combined with their inherent simple, sturdy design, this means economy now and through many years.

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Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

Wood Pulp Chronology*

By Harrison Elliott

Considering the vast extent of present activities in wood-pulp manufacture, it seems incredible that what is now such an important industry should have had such a slow and lowly beginning. In this age of mechanical miracles, a process regarded today as a marvel of perfection, toworrow may become obsolete and appear primitive by comparison with a succeeding development.

The outline here presented is a brief summary of significant experiments which led to the introduction of woodpulp as a papermaking material of marketable value. It is a chronology treating only of the early attempts to make a practical paper of the woody structure of trees and it is simply intended to show the first stages of the evolution.

The events end with the year 1867 when the first saleable paper containing mechanically prepared woodpulp was produced in this country. At this time the prejudice was strong against paper with any wood content. It was considered "shoddy" and inferior stock. But the foresight of the Pagenstechers, the activities of Warner Miller and the initiative of Hon. Wellington Smith prevailed over this prejudice.

The establishment of the Hudson River Pulp and Paper Company (now a unit of International Paper Company) at Palmer's Falls, N. Y., quickly followed with Albrecht Pagenstecher as president and Warren Curtis as a manager whose inventive and mechanical genius soon made that plant the largest manufactory of news print in the world. It was this development of the woodpulp idea that produced the fast running paper machine, making possible the huge rotary press, the modern newspaper and the growth of an enormous industry.

1719—Reaumur, the French scientist, wrote: "The American wasps make a very fine paper, apparently like ours; they extract the fiber of common wood and teach us that one can make paper from the fibers of plants without using rags and linen. They seem to invite us to try whether we cannot arrive at making fine and good paper by the immediate use of certain wood. It is a study which not only should not be neglected, but is important."

1734—Seba in Volume I of his natural history stated that, "This country (Flanders) does not seem to lack trees suited for making paper, if people would give themselves the necessary expense and trouble."

1742—Reaumur in a further study of the wasp and its method of making paper declared that, "I am ashamed not yet to have tried this experiment since it is more than twenty years since I have realized the importance of it and since I have announced it. But I had hoped that some one would have liked to make it his occupation. It would be interesting and possibly might be made very profitable to institute experiments with wood from which these insects make their paper; for if a new material for the manufacture of paper could thus be discovered, the fortunate discoverer would be well repaid, and the country would be enriched by possessing another source of revenue."

1751—Guettard, French botanist, in his "Select Essays on Commerce, etc.," published in London, "An inquiry into materials that may be used in papermaking," suggested the use of wood.

1765 to 1772—Schaeffer published in Germany a six-volume work on papermaking from fibers of trees and plants. The text is printed on specimens of paper made from experimental material. Beech, willow, aspen, mulberry, spruce were some of the woods employed.

1777—The first treatise to deal with papermaking materials, published in America, appeared in Philadelphia. It was a reprint of Guettard's observations of 1751.

1786—Villette published in London a book containing specimens of paper made from wood of the hazel and spindle trees.

1800—Koops wrote and had printed in London a book on straw paper with an appendix of five leaves of "Paper made from Wood alone, the produce of this country, without any intermixture of rags, waste paper, bark, straw or any other vegetable substance, from which Paper might be, or has hitherto been manufactured; and of this the most ample testimony can be given if necessary." The author-inventor claimed it to be the first practical paper made from wood.

1825—English patent granted to Sharp, who had a mill in Hampshire, for a process of making paper from pine shavings. Some specimens were exhibited in Boston.

1826—Cappucius Brothers, papermakers of Turin, Italy, were granted by the king a ten-year monopoly for the making of paper from poplar and other woods.

1830—Wooster & Holmes, of Ohio, manufactured paper of aspen wood reduced to shavings. An edition of the *Crawford Messenger* was printed on some of this paper.

1838—English patent granted to Disgrand for "making paper and pasteboard with wood reduced into a state of paste, and of different sorts of wood that coming under the denomination of white wood, such as popular, has been found to answer best." This was a chemical process with wood reduced to chips.

1844—Charles Fenerty, of Halifax, N. S., as the result of experiments begun in 1839, submitted to English & Blackadar in Halifax a sheet of paper to prove his contention that "our common forest trees, either hard or soft wood, but more especially

* International Paper Monthly.

the fir, spruce or poplar, may be easily reduced by a chafing machine and manufactured into paper."

1844—Frederick Gottlob Keller patented in Germany a wood-pulp grinding machine. The patent was later sold to Henry Voelter.

1847—Voelter by making certain improvements in Keller's wood grinding machine, wood-pulp for newspaper on a commercial basis in Germany.

1849—The wood grinding process was inaugurated at the Souche paper mills in France.

1851—Hugh Burgess and Charles Watt made pulp from wood by the chemical process. White paper suitable for printing was made by them in a mill at Boxmoor, Hertfordshire, England. Part of a weekly edition of the *London Journal* was printed on this paper.

1852—Coupier & Millier, Maidstone, England, secured a patent for preparing woodpulp by a soda process.

1853—B. A. Lavender and Henry Lowe, of Baltimore, produced paper from white pine shavings.

1853—R. A. Brooman obtained a patent in England "for making paper from wood or woody fibres reduced to fibrous pulp by means of mechanical agents acting in the direction of the length or grain of the fibre. The machinery consists of a millstone or millstones, or metal cylinders or rasps with roughened surfaces which are caused to act upon blocks or pieces of wood . . . a current of water being directed on the reducing agent."

1854—Watt & Burgess secured an American patent covering their soda process and set up a manufactory at Gray's Ferry on the Schuylkill near Philadelphia.

1854—George W. Beardslee, of Albany, made experiments with basswood and produced a soft, strong paper. The *Albany Argus* commented that possibly the tree of knowledge was a basswood.

1854—R. & J. C. Martin took out a patent in England for pulping wood by saturating it with water then subjecting it to the action of a cylinder having teeth like a saw or rasp.

1854—Herr von Parmewitz presented to the King of Prussia paper he made from the wood of the pine tree.

1855—Milton D. Whipple, Charlestown, Mass., obtained a patent covering his process for the preparation of pulp by grinding wooden blocks with stone.

1855—Louis Koch, of New York, devised machinery for separating wood fibers by rollers.

1858—Charles Marzoni, New York, patented a method of reducing wood to pulp by the use of an "adamantine" stone with steam and hot water.

1863—Stephen M. Allen, Woburn, Mass., secured a patent for obtaining the fiber of wood by a crushing process to insure length of fiber.

1863—P. A. Chadbourne, Williamstown, Mass., patented a method of making stock from wood by rasping, filing or scraping wood submerged in water.

1863—The Boston *Journal* of January 14, printed its entire edition of paper made of basswood.

1863—The American Wood Paper Company founded their manufactory at Manayunk, near Philadelphia, for the production of wood-pulp by the soda process of Watt & Burgess.

1863—George E. Sellers, Hardin County, Ill., patented a mode of preparing fiber by vertical pressure.

1866—Benjamin C. Tilghman at Manayunk, near Philadelphia, made suitable woodpulp for paper by the sulphite process of which he was the originator. His experiments began in Paris in 1857.

1866—In December, Albrecht, Alberto and Rudolph Pagenstecher import two Voelter woodpulp grinders.

1867—March 5, the Pagenstechers operate their Voelter grinders and produce the first marketable mechanically ground woodpulp made in the United States at Curtisville, near Stockbridge, Mass. The first sale of this pulp was made to the Smith Paper Company of Lee, Mass., at eight cents per pound. The Smith Paper Company, under the management of Hon. Wellington Smith, make paper from it and introduced in the United States mechanically ground wood paper as a commodity.

Control of Air Porosity in Making Paper

Special Inquiry No. 79

A member writes: "We are working towards a lower porosity on some grades of paper made from all sulphate spruce pulpwood. We mean by lower porosity, the resistance of paper to the passage of air, or if used for gumming purposes, the penetration of glue.

"The standard of porosity being the passage of 100 cubic centimeters of air through a circular area of 1 square inch of paper in a measured number of seconds. For this measurement of porosity we use the densometer, manufactured by W. & L. E. Curley, of Troy, N. Y.

"On one particular weight of our paper this standard amount of air passes through the paper in 20 seconds, and we would like to so form our paper as to make it necessary for this standard quantity of air to require 60 seconds for its passage.

"Could you circulate a questionnaire among the Association members, asking for information which might be helpful to us along the lines of:

1. Stock preparations and dumping of beaters
2. The kind of jordan treatment recommended
3. The mesh of the machine wire
4. Speed at which a 60 pound sheet should be run to get the proper porosity
5. Is one or two slices better?
6. Can this lower porosity be gained if a Voith slice is used?
7. Is there any loading material that is helpful?
8. And any general information that you might be able to secure."

In many mills the densometer is regularly used for the purpose of knowing if the stock has received sufficient mechanical treatment in the beaters and jordans or in other words, if it has been delivered to the machine at a sufficient degree of slowness. Consequently it may be said that the densometer checks the slowness tester.

Undoubtedly the more closely formed the sheet the higher is the densometer reading so that the speed, shake, and the position, arrangement and design of the slice as well as addition of short fiber stock specially prepared or jordans loading that will assist towards the best formation would assist towards the desired results.

This is a special inquiry of an eminently practical character in which paper machine operators and superintendents of paper mills as well as technical men should contribute their experience and knowledge as specifically as possible.

The special report containing a transcript of the responses in blank will be sent to everyone who writes on it. Send replies to

W. G. MacNaughton, TAPPI,
18 East 41st street, New York.

Columbia River Mills to Expand

[From our regular correspondent]

Portland, Ore., July 22, 1927.—The Columbia River Paper Mills, Vancouver, Wash., will now have a daily output of 70 tons, an increase of 20 tons, as soon as the installation of the new paper-making machine is completed, work on which is now going forward. W. B. DuBois, vice-president of the company, states that the machinery will be ready for use by August. A new digester has just been added and is being lined and a new 600 horsepower boiler is being installed. The cost of the improvements is near $250,000. The paper machine will be partly devoted to making fruit wrapping tissue.

Reducing Costs and Increasing Efficiency in the News Print Paper Industry*

By George D. Bearce, Engineer, News Print Service Bureau

The news print industry has been particularly fortunate in being able to operate at approximately 90 per cent of rated capacity during the past few years. This has naturally led to a very rapid expansion which for the current year will probably break all records. This impressive rate of increase in productive capacity will doubtless recede during the next year or so, since it is recognized as an abnormal condition. The normal rate of growth of the industry over a long period of years is 7 per cent (Fig. 1), while the new production schedule for the present year is more than double this average. Broadly, the industry is in a satisfactory condition, although its position will be much improved when productive capacity adjusts itself to consumption.

Hand in hand with this expansion there has been an impressive development and improvement in machinery and equipment, technical progress and operating control. All progressive companies, both old and new, have shared in the increase of efficiency and the decrease of the manufacturing costs of paper. This achievement has been accomplished chiefly by means of better utilization of power, machinery and labor through improved methods of management.

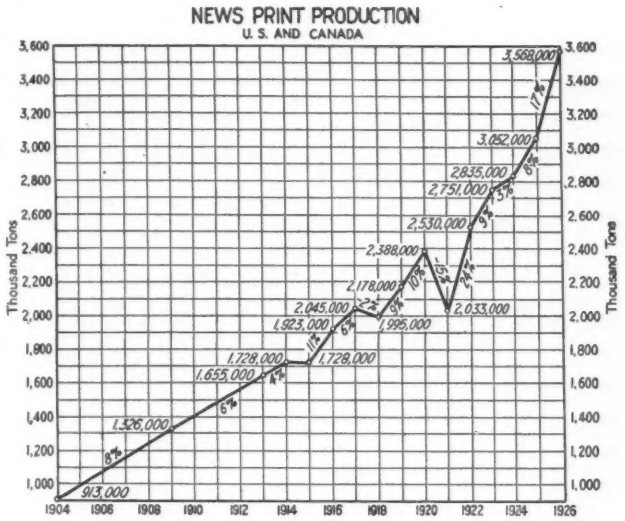

FIG. 1
Increase in News Print Paper Production

Plant and Processes

The manufacture of news print paper is continuous and largely mechanical, therefore quantity production is essential. The cost of buildings, equipment and working capital for a balanced plant requires a capital outlay of $40,000 to $50,000 per ton of daily production. A 200-ton plant is considered the minimum size in modern practice, therefore the cost of a new plant is approximately $8,000,000 to $10,000,000.

A balanced news print mill consists of the groundwood, sulphite and paper mill, together with the steam plant and other auxiliary departments. Groundwood or mechanical pulp is made by forcing the pulpwood sticks against a rapidly revolving grinderstone that has a specially prepared surface. The wood fibers are torn off as a pulp that is rather short-fibered but a large per cent of the wood is utilized. Sulphite pulp is made by cooking the wood chips with high pressure steam and the necessary chemicals in a brick-lined steel digester. The pulp produced is a long-fibered cellulose stock that gives strength to the paper. These two pulps are combined at a ratio of ap-

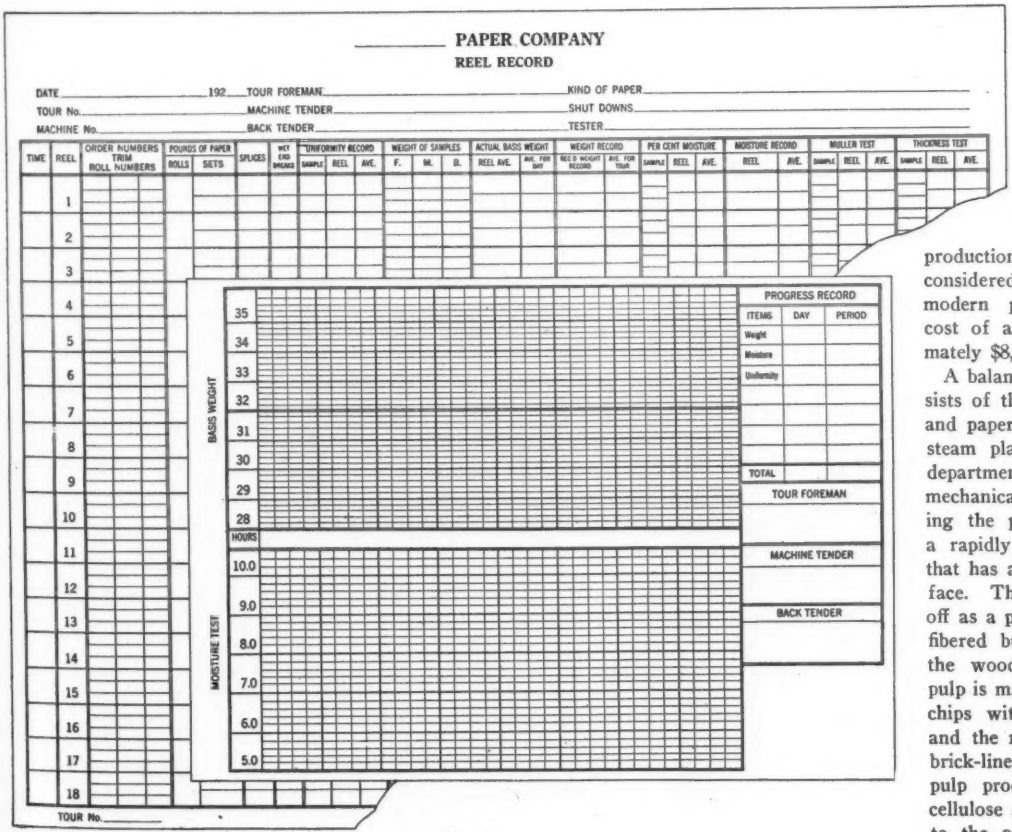

FIG. 2
Typical Forms Used to Record Paper Machine Operating Data

* Manufacturing Industries.

There is a Connersville Cycloidal Pump that will meet the needs of a small felt conditioner or the suction rolls on the widest machines.

Power Economy under Normal Operating Conditions

5" to 16" mercury is the range of suctions in at least 80% of the flat box, felt conditioner, vacuum filter, and suction roll service in paper mills. The careful manager is consequently interested in pumps that show the greatest economies under these conditions.

In this range of vacuums, most common in paper mill operation, Connersville Cycloidal Pumps use less power. Combined with their inherent simple, sturdy design, this means economy now and through many years.

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Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

Wood Pulp Chronology*

By Harrison Elliott

Considering the vast extent of present activities in wood-pulp manufacture, it seems incredible that what is now such an important industry should have had such a slow and lowly beginning. In this age of mechanical miracles, a process regarded today as a marvel of perfection, toworrow may become obsolete and appear primitive by comparison with a succeeding development.

The outline here presented is a brief summary of significant experiments which led to the introduction of woodpulp as a papermaking material of marketable value. It is a chronology treating only of the early attempts to make a practical paper of the woody structure of trees and it is simply intended to show the first stages of the evolution.

The events end with the year 1867 when the first saleable paper containing mechanically prepared woodpulp was produced in this country. At this time the prejudice was strong against paper with any wood content. It was considered "shoddy" and inferior stock. But the foresight of the Pagenstechers, the activities of Warner Miller and the initiative of Hon. Wellington Smith prevailed over this prejudice.

The establishment of the Hudson River Pulp and Paper Company (now a unit of International Paper Company) at Palmer's Falls, N. Y., quickly followed with Albrecht Pagenstecher as president and Warren Curtis as a manager whose inventive and mechanical genius soon made that plant the largest manufactory of news print in the world. It was this development of the woodpulp idea that produced the fast running paper machine, making possible the huge rotary press, the modern newspaper and the growth of an enormous industry.

1719—Reaumur, the French scientist, wrote: "The American wasps make a very fine paper, apparently like ours; they extract the fiber of common wood and teach us that one can make paper from the fibers of plants without using rags and linen. They seem to invite us to try whether we cannot arrive at making fine and good paper by the immediate use of certain wood. It is a study which not only should not be neglected, but is important."

1734—Seba in Volume I of his natural history stated that, "This country (Flanders) does not seem to lack trees suited for making paper, if people would give themselves the necessary expense and trouble."

1742—Reaumur in a further study of the wasp and its method of making paper declared that, "I am ashamed not yet to have tried this experiment since it is more than twenty years since I have realized the importance of it and since I have announced it. But I had hoped that some one would have liked to make it his occupation. It would be interesting and possibly might be made very profitable to institute experiments with wood from which these insects make their paper; for if a new material for the manufacture of paper could thus be discovered, the fortunate discoverer would be well repaid, and the country would be enriched by possessing another source of revenue."

1751—Guettard, French botanist, in his "Select Essays on Commerce, etc.," published in London, "An inquiry into materials that may be used in papermaking," suggested the use of wood.

1765 to 1772—Schaeffer published in Germany a six-volume work on papermaking from fibers of trees and plants. The text is printed on specimens of paper made from experimental material. Beech, willow, aspen, mulberry, spruce were some of the woods employed.

1777—The first treatise to deal with papermaking materials, published in America, appeared in Philadelphia. It was a reprint of Guettard's observations of 1751.

1786—Villette published in London a book containing specimens of paper made from wood of the hazel and spindle trees.

1800—Koops wrote and had printed in London a book on straw paper with an appendix of five leaves of "Paper made from Wood alone, the produce of this country, without any intermixture of rags, waste paper, bark, straw or any other vegetable substance, from which Paper might be, or has hitherto been manufactured; and of this the most ample testimony can be given if necessary." The author-inventor claimed it to be the first practical paper made from wood.

1825—English patent granted to Sharp, who had a mill in Hampshire, for a process of making paper from pine shavings. Some specimens were exhibited in Boston.

1826—Cappucius Brothers, papermakers of Turin, Italy, were granted by the king a ten-year monopoly for the making of paper from poplar and other woods.

1830—Wooster & Holmes, of Ohio, manufactured paper of aspen wood reduced to shavings. An edition of the *Crawford Messenger* was printed on some of this paper.

1838—English patent granted to Disgrand for "making paper and pasteboard with wood reduced into a state of paste, and of different sorts of wood that coming under the denomination of white wood, such as popular, has been found to answer best." This was a chemical process with wood reduced to chips.

1844—Charles Fenerty, of Halifax, N. S., as the result of experiments begun in 1839, submitted to English & Blackadar in Halifax a sheet of paper to prove his contention that "our common forest trees, either hard or soft wood, but more especially

* International Paper Monthly.

the fir, spruce or poplar, may be easily reduced by a chafing machine and manufactured into paper."

1844—Frederick Gottlob Keller patented in Germany a wood-pulp grinding machine. The patent was later sold to Henry Voelter.

1847—Voelter by making certain improvements in Keller's wood grinding machine, wood-pulp for newspaper on a commercial basis in Germany.

1849—The wood grinding process was inaugurated at the Souche paper mills in France.

1851—Hugh Burgess and Charles Watt made pulp from wood by the chemical process. White paper suitable for printing was made by them in a mill at Boxmoor, Hertfordshire, England. Part of a weekly edition of the *London Journal* was printed on this paper.

1852—Coupier & Millier, Maidstone, England, secured a patent for preparing woodpulp by a soda process.

1853—B. A. Lavender and Henry Lowe, of Baltimore, produced paper from white pine shavings.

1853—R. A. Brooman obtained a patent in England "for making paper from wood or woody fibres reduced to fibrous pulp by means ot mechanical agents acting in the direction of the length or grain of the fibre. The machinery consists of a millstone or millstones, or metal cylinders or rasps with roughened surfaces which are caused to act upon blocks or pieces of wood . . . a current of water being directed on the reducing agent."

1854—Watt & Burgess secured an American patent covering their soda process and set up a manufactory at Gray's Ferry on the Schuylkill near Philadelphia.

1854—George W. Beardslee, of Albany, made experiments with basswood and produced a soft, strong paper. The *Albany Argus* commented that possibly the tree of knowledge was a basswood.

1854—R. & J. C. Martin took out a patent in England for pulping wood by saturating it with water then subjecting it to the action of a cylinder having teeth like a saw or rasp.

1854—Herr von Parmewitz presented to the King of Prussia paper he made from the wood of the pine tree.

1855—Milton D. Whipple, Charlestown, Mass., obtained a patent covering his process for the preparation of pulp by grinding wooden blocks with stone.

1855—Louis Koch, of New York, devised machinery for separating wood fibers by rollers.

1858—Charles Marzoni, New York, patented a method of reducing wood to pulp by the use of an "adamantine" stone with steam and hot water.

1863—Stephen M. Allen, Woburn, Mass., secured a patent for obtaining the fiber of wood by a crushing process to insure length of fiber.

1863—P. A. Chadbourne, Williamstown, Mass., patented a method of making stock from wood by rasping, filing or scraping wood submerged in water.

1863—The Boston *Journal* of January 14, printed its entire edition of paper made of basswood.

1863—The American Wood Paper Company founded their manufactory at Manayunk, near Philadelphia, for the production of wood-pulp by the soda process of Watt & Burgess.

1863—George E. Sellers, Hardin County, Ill., patented a mode of preparing fiber by vertical pressure.

1866—Benjamin C. Tilghman at Manayunk, near Philadelphia, made suitable woodpulp for paper by the sulphite process of which he was the originator. His experiments began in Paris in 1857.

1866—In December, Albrecht, Alberto and Rudolph Pagenstecher import two Voelter woodpulp grinders.

1867—March 5, the Pagenstechers operate their Voelter grinders and produce the first marketable mechanically ground woodpulp made in the United States at Curtisville, near Stockbridge, Mass. The first sale of this pulp was made to the Smith Paper Company of Lee, Mass., at eight cents per pound. The Smith Paper Company, under the management of Hon. Wellington Smith, make paper from it and introduced in the United States mechanically ground wood paper as a commodity.

Control of Air Porosity in Making Paper

SPECIAL INQUIRY No. 79

A member writes: "We are working towards a lower porosity on some grades of paper made from all sulphate spruce pulpwood. We mean by lower porosity, the resistance of paper to the passage of air, or if used for gumming purposes, the penetration of glue.

"The standard of porosity being the passage of 100 cubic centimeters of air through a circular area of 1 square inch of paper in a measured number of seconds. For this measurement of porosity we use the densometer, manufactured by W. & L. E. Curley, of Troy, N. Y.

"On one particular weight of our paper this standard amount of air passes through the paper in 20 seconds, and we would like to so form our paper as to make it necessary for this standard quantity of air to require 60 seconds for its passage.

"Could you circulate a questionnaire among the Association members, asking for information which might be helpful to us along the lines of:

1. Stock preparations and dumping of beaters
2. The kind of jordan treatment recommended
3. The mesh of the machine wire
4. Speed at which a 60 pound sheet should be run to get the proper porosity
5. Is one or two slices better?
6. Can this lower porosity be gained if a Voith slice is used?
7. Is there any loading material that is helpful?
8. And any general information that you might be able to secure."

In many mills the densometer is regularly used for the purpose of knowing if the stock has received sufficient mechanical treatment in the beaters and jordans or in other words, if it has been delivered to the machine at a sufficient degree of slowness. Consequently it may be said that the densometer checks the slowness tester.

Undoubtedly the more closely formed the sheet the higher is the densometer reading so that the speed, shake, and the position. arrangement and design of the slice as well as addition of short fiber stock specially prepared or jordans loading that will assist towards the best formation would assist towards the desired results.

This is a special inquiry of an eminently practical character in which paper machine operators and superintendents of paper mills as well as technical men should contribute their experience and knowledge as specifically as possible.

The special report containing a transcript of the responses in blank will be sent to everyone who writes on it. Send replies to

W. G. MACNAUGHTON, TAPPI,
18 East 41st street, New York.

Columbia River Mills to Expand

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., July 22, 1927.—The Columbia River Paper Mills, Vancouver, Wash., will now have a daily output of 70 tons, an increase of 20 tons, as soon as the installation of the new paper-making machine is completed, work on which is now going forward. W. B. DuBois, vice-president of the company, states that the machinery will be ready for use by August. A new digester has just been added and is being lined and a new 600 horsepower boiler is being installed. The cost of the improvements is near $250,000. The paper machine will be partly devoted to making fruit wrapping tissue.

Reducing Costs and Increasing Efficiency in the News Print Paper Industry*

By George D. Bearce, Engineer, News Print Service Bureau

The news print industry has been particularly fortunate in being able to operate at approximately 90 per cent of rated capacity during the past few years. This has naturally led to a very rapid expansion which for the current year will probably break all records. This impressive rate of increase in productive capacity will doubtless recede during the next year or so, since it is recognized as an abnormal condition. The normal rate of growth of the industry over a long period of years is 7 per cent (Fig. 1), while the new production schedule for the present year is more than double this average. Broadly, the industry is in a satisfactory condition, although its position will be much improved when productive capacity adjusts itself to consumption.

Hand in hand with this expansion there has been an impressive development and improvement in machinery and equipment, technical progress and operating control. All progressive companies, both old and new, have shared in the increase of efficiency and the decrease of the manufacturing costs of paper. This achievement has been accomplished chiefly by means of better utilization of power, machinery and labor through improved methods of management.

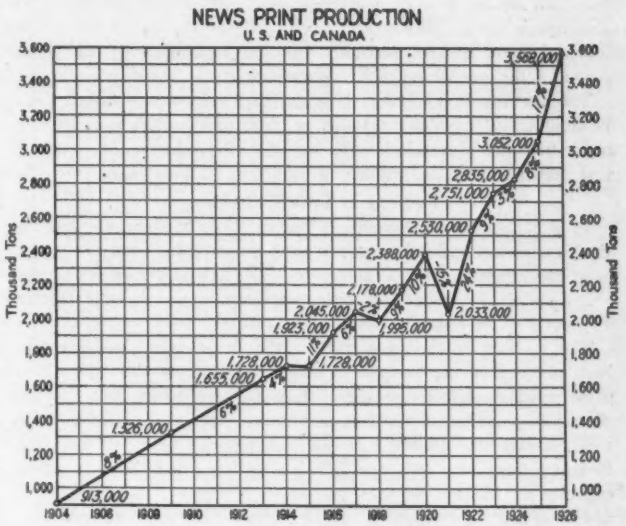


FIG. 1
Increase in News Print Paper Production

Plant and Processes

The manufacture of news print paper is continuous and largely mechanical, therefore quantity production is essential. The cost of buildings, equipment and working capital for a balanced plant requires a capital outlay of $40,000 to $50,000 per ton of daily production. A 200-ton plant is considered the minimum size in modern practice, therefore the cost of a new plant is approximately $8,000,000 to $10,000,000.

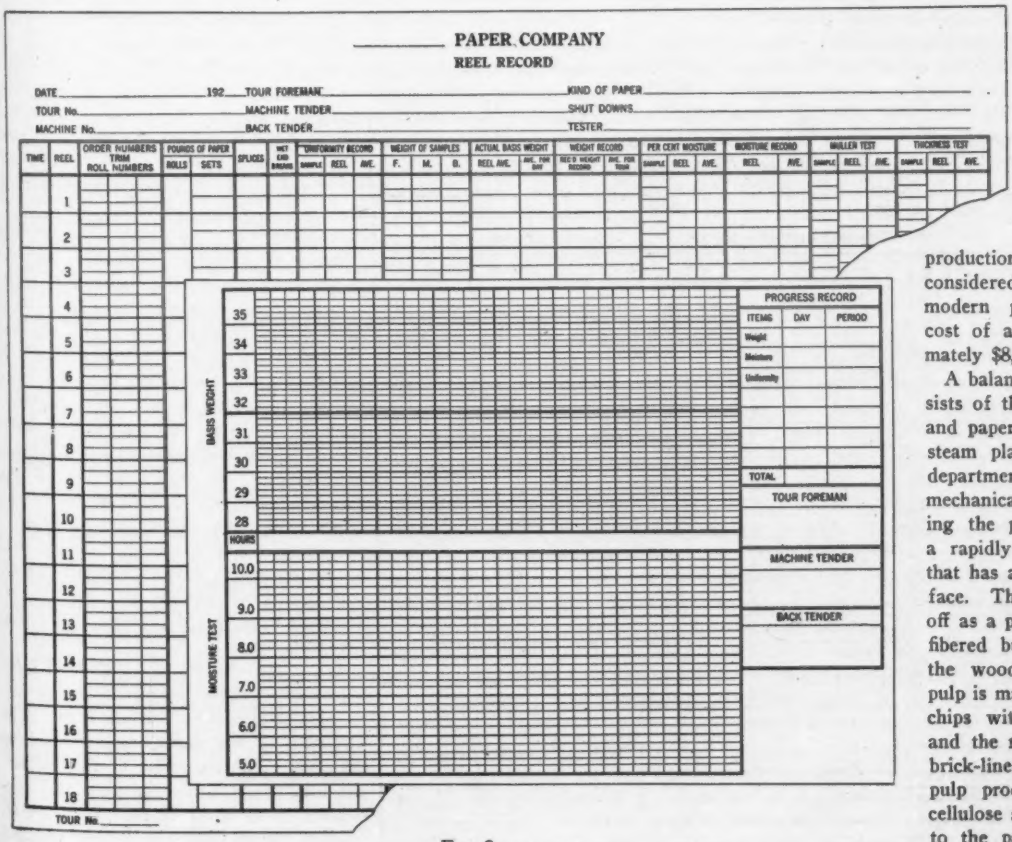


FIG. 2
Typical Forms Used to Record Paper Machine Operating Data

A balanced news print mill consists of the groundwood, sulphite and paper mill, together with the steam plant and other auxiliary departments. Groundwood or mechanical pulp is made by forcing the pulpwood sticks against a rapidly revolving grinderstone that has a specially prepared surface. The wood fibers are torn off as a pulp that is rather short-fibered but a large per cent of the wood is utilized. Sulphite pulp is made by cooking the wood chips with high pressure steam and the necessary chemicals in a brick-lined steel digester. The pulp produced is a long-fibered cellulose stock that gives strength to the paper. These two pulps are combined at a ratio of ap-

* Manufacturing Industries.

proximately 75 per cent groundwood and 25 per cent sulphite to make news print paper.

The basic principles of economical manufacturing can be, and are, well adapted to the production of news print. The existing physical conditions make possible the application of the following fundamental principles or laws of management:

1. Standardization of product
2. Large-scale or mass production
3. Continuous flow of materials
4. Specialization of work
5. Adequate control methods for the regulation of materials and the performance of operations.

The success in applying these principles is almost wholly dependent upon the ability of management to coordinate and unify paper machine 164 inches wide, capable of producing 50 tons per low cost per unit of production.

Factors in Cost Reduction

In general, the two principal factors that have made possible the cost reductions in the news print paper industry are:

1. The adoption of new and improved machinery and equipment
2. The improvement of operating conditions through better production control.

The mechanical improvement in the news print industry has been marked during the past seven or eight years. In 1919 a new paper machine 164 inches wide, capable of producing 50 tons per day and operating at 700 feet per minute, was considered a large unit. Today the 100-ton machine is common. One new mill has installed machines that are 270 inches wide and have a rated capacity of 125 to 140 tons per day. Moreover, these machines are designed to operate at 1,000 to 1,200 feet per minute. In brief, the standard of productivity of the paper machine unit has nearly trebled because the width has been increased over 60 per cent and the speed nearly 50 per cent. Such an increase results in lowered operating labor and overhead costs.

The adoption of auxiliary paper machine equipment such as heat economizers, stock savers, suction couch and press rolls, felt cleaners, web carriers, etc., have been important factors in the reduction of waste in paper mill operation. The adoption of the sectionalized electric drive, the use of anti-friction bearings, the worm gear drive, and many other mechanical improvements have assisted in reducing the manufacturing costs.

Low-cost power is vital in the production of groundwood or mechanical pulp, since it requires about 75 horsepower per ton of product. The major improvement in this department has been the adoption of the automatic magazine and continuous grinders in preference to the hand fed pocket grinders. This has been made possible by the extensive hydroelectric developments that supply power to operate the larger magazine grinders which can produce three to four times more pulp per unit than the old "pocket" machines. The direct result has been a reduction of $0.75 to $1 per ton in direct labor cost, althougn this is offset to some extent by the higher investment and stone costs.

Steam represents 30 to 40 per cent of the manufacturing or conversion cost of news print paper, consequently both its generation and utilization have been a study of importance in the industry. New mills have universally adopted the most modern type of boiler with either the latest underfeed stoker or pulverized fuel units. A number of existing plants have altered their boilers and installed new stokers or pulverized fuel. This new equipment has been a large factor in the cost of steam, and together with more careful utilization has been a leading factor in the manufacturing cost reduction.

The combination of new and improved equipment of various types together with the "straight-line" layout of the new plants that have been built has made available the instruments to make paper at a lower cost than was possible only a few years ago.

Production Control

A new mill with all latest and most modern equipment should be able to make its product at a lower cost than plants less favorably equipped. However, the machinery alone is not responsible for the increased efficiency in the industry. This production accomplishment is largely due to the successful use by the management, of men, machines and materials through more effective control methods. The manufacturing processes of pulps and paper are complex, distinctive problems that involve close technical control of the various operations. Nearly all companies have their special methods of operation adapted to suit the conditions. However, the general principles of control and operation are the same in all plants since the product is similar. This is especially true in the case of news print paper which is well standardized as to basis weight, quality, strength, etc.

Mill Blank Paper Co. — PAPER MILL OPERATING REPORT — Month February 1925

	MACHINES No. 1	No. 2	No.	No.	No.	No.	No.	No.	Month	Cumulative
1. Scheduled Operating Hrs.	660	660							1200	2400
2. Actual Operating Hrs.	560	580							1170	2310
3. Operating Hrs. %	98.35	96.70							97.52	96.37
4. Mill Loss — Breakdowns %	1.65	1.30							1.43	3.30
5. Power %		2.10							1.05	.53
6. Lack of Orders %										
7. *Miscellaneous %										
8. Total %	1.65	3.30							2.48	3.73
9. Actual Average Speed (Ft.)	620	700							x x x	x x x
10. Operating Capacity Trim (Inches)	146.1	146.8							292.9	291.4
11. Actual Average Trim (Inches)	140.5	143.6							284.1	282.8
12. Loss in Trim %	3.83	2.18							3.00	2.95
13. Capacity Production (Tons per Day)	58.15	66.30							124.45	122.4
14. Actual Production (Tons per Day)	52.37	58.32							110.69	107.1
15. MACH. CREW EFFICIENCY %	93.88	90.14							91.94	90.45
16. Mach. Prod. Loss—Felts, Wires %	1.04	1.48							1.26	2.06
17. Wash-ups %	1.10	1.24							1.17	1.14
18. Broke and Coils %	3.98	7.14							5.63	6.35
19. Total %	6.12	9.86							8.06	9.55
20. PLANT EFFICIENCY %									86.73	84.24
21. Actual Basis Weight (Lbs.)	32.12	32.24							32.18	31.95
22. Actual Lbs. per Inch Trim	745	812							779	758
23. Lbs. per Inch Trim (32 lb. Basis)	742	806							775	759
24. Trim Speed Production Factor	119.5	115.1							117.3	115.5
25. Materials—Sulphite %									28.1	28.6
26. Groundwood %									77.3	77.4
27. Other Fibers %									1.1	0.5
28. Fillers %									0.6	.8
29. Total %									107.1	107.3
30. Moisture in Paper %									9.46	9.21
31. Dry Fiber in Sheet to Dryers %									32.1	31.2
32. Lbs. Steam per Ton of Paper									8667	9110

Special Note* Reported by

FIG. 3
Standard "Paper Mill" Operating Report (Assumed Data)

The importance of adequate operating records is apparent especially for the paper machines which operate on a 24-hour schedule and mass production is a factor in operating costs. The expense of running a large modern machine is $50 to $60 per hour, therefore the cause of any lost time is accurately recorded together with the production of paper, speed of the machines, quality of product and other essential data. Fig. 2 is a representative report used by one of the paper mills and illustrates the type of information that is recorded. Such data are necessary to further analyze operating results as well as to keep the information before the management and operating crews.

While the volume of production is of major importance, the quality of product is also taken into consideration. The strength of the paper, as indicated by the "pop test," the finish of the surface, the formation of the sheet and the percentage of moisture in the paper, are all quality factors that are closely watched so that the product will meet the requirements of the consumer.

The individual mills in the industry developed various forms of efficiency records to measure the operating accomplishments of the machine crews. The fundamental principles of the reports were essentially the same throughout the industry. Recognizing the value of adopting a uniform method of procedure, a committee composed of representatives of the companies associated with the News Print Service Bureau was formed several years ago to formulate standard procedure for recording certain major data. Three operating reports were selected and standardized in detail since they covered the departments and operations that have a marked influence on operating and the final cost of the product. These reports thus made uniform for interchange of data among plants were:

1. Paper mill operating
2. Machine clothing and wire
3. Steam plant efficiency

The paper mill operating report which was finally evolved and is now accepted as standard practice is illustrated by Fig. 3. This record shows the essential information necessary to control operation and calculate the efficiency since all losses are accounted for and analyzed according to responsibility. The "machine crew" efficiency percentage, calculated on the standard basis, is a measure of the operating results achieved by the crews on each machine, whereas the "plant efficiency" indicates overall operating results.

The machine clothing and wire report, Fig. 4, is designed to record the efficiency of utilization, and this equipment is an important controllable item that has an appreciable effect on the final cost of the product. This report eliminates the price factor and makes possible the analysis of (1) quality and design, (2) installation and operation of equipment, and (3) condition of the paper machine relative to its treatment of wires and machine clothing.

The executive of the modern paper mill realizes the importance of economical generation and utilization of steam, since it represents approximately 40 per cent of the conversion cost of making news print paper. The steam plant efficiency report, Fig. 5, is based on the 1923 A.S.M.E. power test code for stationary boilers and represents standard practice. The steam plant is considered a distinct unit of the paper mill which must generate steam at the lowest possible cost and receive the proper credit when it is delivered to the consuming departments. The steam cost report, Fig. 6, is closely allied to the efficiency of generation, and the two are inter-dependent on the analysis of the steam problem in the paper mill.

Standard principles of accounting for news print paper mills have also been developed covering the various departments of the plant. Special attention has been given to the conversion or operating costs which include the controllable operations in the groundwood pulp, sulphite pulp and news print rolls departments. The operating or efficiency reports and the conversion cost figures are both essential for the analysis of plant operating. The efficiency percentage is a measure of performance which should be reflected in the costs and all of these reports are so aligned that it is possible to interpret in detail many functions of operation.

The information shown on the operating or efficiency reports is in such form that it can be used by both the operators and executives. Information of this type often serves the purpose better than costs, since the basic facts are presented in a manner more easily understood by men responsible for production. They have the further advantage of showing correct results a day, or in some cases a few hours, after the work is done.

Comparative Results

The adoption of the standard operating reports by a majority of the news print mills made possible the comparison of results between mills. The companies recognized the value of pooling the information from a large number of mills. Starting with a few companies a few years ago, there are now about fifty mills in the United States, Canada and Newfoundland associated with

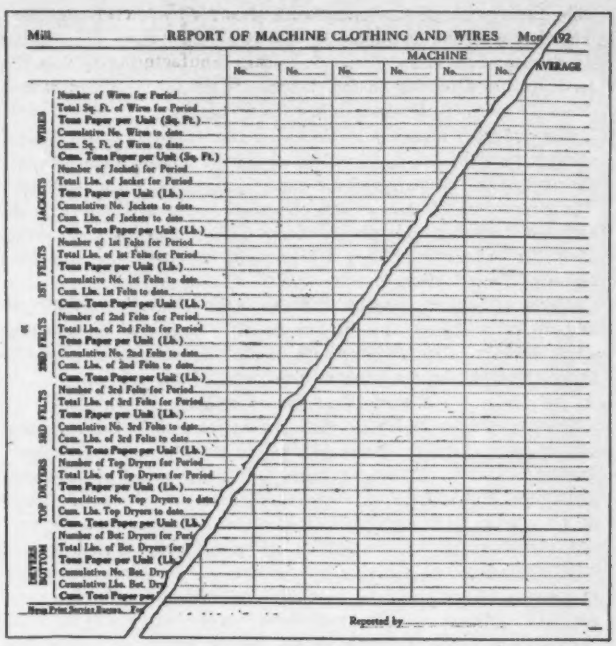


FIG. 4
Form for Reporting Machine Clothing and Wire Data

the News Print Service Bureau that cooperate in the exchange of data on a comparative basis. Fig. 7 illustrates the type of condensed statement covering the paper mill operating report which is issued in connection with the detailed statement that gives complete information.

The news print industry is perhaps one of the first to operate effectively under the cooperative principles outlined. It is a high tribute to the vision and broadness of those executives who administer the many companies making news print paper in North America, that they desire to pool their information and in return receive the coordinated and comparative data covering all participating companies. This type of cooperative effort is rare in industry and especially one as highly competitive as the manufacture of news print paper. The executives of this industry recognized, however, that there are very few secrets in the manufacturing process and were confident that such an exchange of data would not only benefit the individual companies but also the entire industry.

Exchange of Data

The operating reports are prepared on the standard basis and submitted to the News Print Service Bureau monthly. After being checked and coordinated, they are printed in the form of comparative statements, and sent to the cooperating mills on a purely reciprocative basis. Such a comparative statement represents a large volume of figures and one of the most important and difficult problems has been to standardize the method of reporting. Uniformity of such reports is vital in statements of such a character, and accuracy is necessary in order that all cooperating companies have confidence in the figures. Very definite instructions have been provided for all the reporting mills so that they know what methods should be used in preparing the figures.

The information shown on the comparative statements is used in many different ways by the mills to check their operating results. Some conditions are shown up that may be well known to the individual mills, whereas other comparisons might point out an especially strong or weak spot in operation.

Perhaps one of the most important and outstanding features of such comparative reports is the incentive involved and the inspirational value both to the management and workmen. The comparative statements go to the operating executives and pro-

vide them with a measuring stick for their own management. They are also able to judge the results obtained by any particular department and can use the figures as an incentive to superintendents and workmen on the principle of the spirit of competition.

Responsibility for Progress

The progress made in productivity and cost reductions by the various mills in the news print industry is almost wholly due to the aggressive initiative and the exceptional ability of management. The executives of the various companies have used every available tool to make their plants effective producing units, operating at a high efficiency. This achievement has been the combined result of the adoption of better mechanical equipment and control methods as well as the more efficient utilization of power, labor and all other factors to the benefit of all without detriment to any. Moreover, such reductions in cost have been necessary in order to offset the declining market price of the product.

Steam Plant Improvements

Many individual cases of efficiency increase and cost reduction can be cited covering almost every step in pulp and paper manufacture. The outstanding results have been achieved in steam generation and utilization. One plant, after an exhaustive study of its conditions compared with those of other mills, made certain minor mechanical changes in equipment and adopted a more effective control of steam plant operations. The interest of the executives was aroused because of a poor showing on the comparative statements. The movement spread through the whole organization down through to the boiler house superintendent and operators. The result was that in a period of 15 to 18 months they increased the efficiency of the steam plant from about 69 per cent to nearly 77 per cent and reduced the cost per 1,000 pounds of steam from approximately 65 to 44 cents. These results were verified by the actual coal consumption for the years previous to the change and after the conditions were corrected. Making allowance for the change in coal prices this small plant saved over $40,000 on coal alone over the period of 12 months.

Another plant had a similar experience, and by an intense study of furnace construction, quality of fuel, operation of boilers and stokers as well as other factors involved, was able to reduce the coal cost over $30,000 in one year. This company went further into the problem and by the installation of a coal dock and handling equipment saved an additional $30,000 the following year. This combined saving represented a reduction of nearly 20 per cent in the cost of fuel at this mill.

The two instances just mentioned are for steam plants that might be considered old. Many other boiler houses have shown increased efficiency of operation and a proportionate reduction in cost during the past few years.

Several mills, after studying their conditions, have completely abandoned their old boiler plants and installed modern equipment which will in most cases save the entire cost of installation in four or five years. Practically all of the new mills constructed during the past few years have installed the latest type of underfeed stokers or pulverized fuel systems; consequently they are keeping their fuel costs at a minimum.

It can doubtless be safely said that there is hardly a steam plant in the industry that has not achieved some results in the cost reduction problem. Moreover, the control methods adopted and the fact that both the executives and operators receive every month, through the exchange of comparative figures, a statement of their rating on a basis of efficiency, both tend to keep the boiler house operatives on their toes at all times.

Much progress has been made in the paper mill departments of the various plants. The standardized methods of calculating operating efficiency enables the management and men to compare their results with those of other mills. Many papermakers are acquainted with other plants and the comparative data tend to develop the competitive spirit between mills as well as between paper machines.

One large company increased its production nearly 14 per cent in a period of about two years. This was partly due to increased efficiency of operation and also speeding up machines. The interest of the operating crews was aroused and kept up by posting the tonnages, efficiencies and other data right in the machine room where it could be seen at all times.

The details on the comparative statements are not overlooked by any means. In one case a company found that the percentage of moisture in paper was very much poorer than the average. A high moisture per cent is desirable because the finish is improved and less papermaking materials are required. The improvement in this one item through the efforts of executives, superintendents and machine crew probably saved this company nearly $50,000 per year in operating costs.

The felt and wire records create a great deal of interest and lead to investigations that result in higher efficiency of utilization and lowered costs. Cases have been reported where a change in operating methods decreased the cost of wires and machine clothing over $25,000 per year in one large mill.

The small item of lubricants was taken into consideration by one mill and the net result was a saving of nearly $4,000 per year. As a result of comparisons between mills, one company even replaced part of its pulp mill and an old boiler plant with modern equipment. The reduction in cost due to the change was doubtless nearly $90,000 per year. Many additional estimates of savings could be cited but these indicate the type of

STEAM PLANT EFFICIENCY REPORT

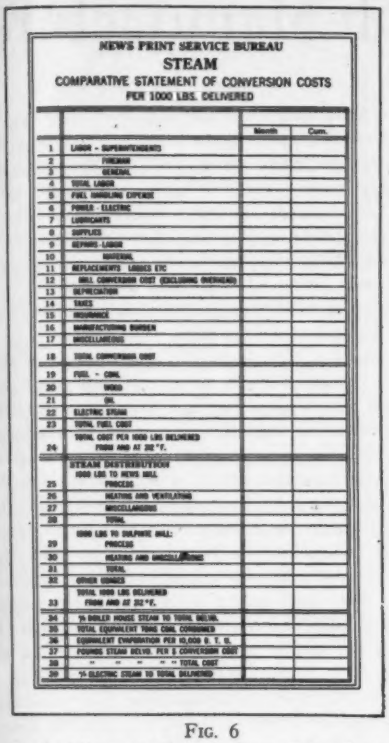
Mill Blank Paper Co. Month February 192 5

	Period	Cumulative
1. Steam Pressure (Lbs. per Sq. In.)	147	146
2. Temperature of Steam	520	516
(a) Quality of Steam (Degrees Superheat or % Moisture)	158	151
3. Feedwater (a) Temperature Entering Boilers	250	252
(b) Temperature Entering Economizers	150	154
(c) Increased Temperature Due to Economizers	100	98
4. Flue Gas (a) Temperature Leaving Boilers	560	554
(b) Temperature Leaving Economizers	400	396
(c) Decrease of Temperature due to Economizers	160	158
5. Fuel Used, (as fired) (a) Coal	14,696,700	29,482,000
(b) Wood (Actual Lb.) Equiv. Coal Basis		
(c) Fuel Oil (Actual Lb.) Equiv. Coal Basis		
6. Equivalent Dry Fuel Used (Total)	14,079,439	28,159,880
7. Total Weight of Water Fed to Boilers (Feedwater Meter)	122,544,000	284,651,000
8. Total Weight of Steam Generated (Flow Meters)	117,965,000	238,144,000
9. Factor of Evaporation for Water Entering Economizers	1.199	1.191
10. Total Equivalent Evaporation from and at 212°	141,440,000	271,996,000
11. Equivalent Evaporation from and at 212° per Lb. Equivalent Dry Fuel Used	10.07	9.67
12. Equivalent Evaporation from and at 212° per 10,000 B. t. u.	7.56	7.25
13. Per cent Rating Developed	138	145
14. EFFICIENCY OF BOILER, FURNACE AND GRATE	67.7	67.1
15. EFFICIENCY OF PLANT WITH ECONOMIZERS	73.2	70.3
16. Final Coal Analysis:		
(a) Moisture (As fired)	4.25	4.58
(b) Volatile Matter (Dry)	30.90	32.10
(c) Fixed Carbon (Dry)	57.20	54.80
(d) Ash (Dry)	11.90	13.10
B. t. u. per Lb. (Dry)	13,290	13,340
17. Combustible in Ash %	25.18	26.85

All Temperatures in degrees Fahrenheit. All Weights in Pounds.
All Pressures are Gauge Pressures. 1 Boiler H. P.—10 Sq. Ft. Heating Surface.

Reported By

FIG. 5
Standard Steam Plant Efficiency Report



NEWS PRINT SERVICE BUREAU
STEAM
COMPARATIVE STATEMENT OF CONVERSION COSTS
PER 1000 LBS. DELIVERED

		Month	Cum.
1	LABOR - SUPERINTENDENCE		
2	FOREMAN		
3	GENERAL		
4	TOTAL LABOR		
5	FUEL HANDLING EXPENSE		
6	POWER - ELECTRIC		
7	LUBRICANTS		
8	SUPPLIES		
9	REPAIRS - LABOR		
10	MATERIAL		
11	REPLACEMENTS - LABOR ETC		
12	MILL CONVERSION COST (EXCLUDING OVERHEAD)		
13	DEPRECIATION		
14	TAXES		
15	INSURANCE		
16	MANUFACTURING BURDEN		
17	MISCELLANEOUS		
18	TOTAL CONVERSION COST		
19	FUEL - COAL		
20	WOOD		
21	OIL		
22	ELECTRIC STEAM		
23	TOTAL FUEL COST		
24	TOTAL COST PER 1000 LBS DELIVERED FROM AND AT 212°F.		
	STEAM DISTRIBUTION 1000 LBS TO NEWS MILL		
25	PRORATE		
26	HEATING AND VENTILATING		
27	MISCELLANEOUS		
28	TOTAL		
	1000 LBS TO SULPHITE MILL:		
29	PRORATE		
30	HEATING AND MISCELLANEOUS		
31	TOTAL		
32	OTHER USAGES		
33	TOTAL 1000 LBS DELIVERED FROM AND AT 212°F.		
34	% BOILER HOUSE STEAM TO TOTAL DELIVD.		
35	TOTAL EQUIVALENT TONS COAL CONSUMED		
36	EQUIVALENT EVAPORATION PER 10,000 B. T. U.		
37	POUNDS STEAM DELVD. PER $ CONVERSION COST		
38	" " " " " TOTAL COST		
39	% ELECTRIC STEAM TO TOTAL DELIVERED		

FIG. 6

Standard Reporting Form for Steam Plant Costs

Condensed Statement

News Print Service Bureau

PAPER MILL

Comparative Operating Report

MONTH ending March 31, 1927. ISSUED April 25, 1927.

COMPANY	Mill Losses: Break Downs Power Stock	Operating Hours to Total Schedule Hours %	Trim Loss %	Machine Losses: Felts Wires and Wash-ups %	Machine Losses: Culls and Broke %	Machine Crew Efficiency %	Plant Efficiency %	Pounds Per Inch Trim 32 lb. Basis	Moisture in Paper	Pounds of Steam per Ton of Paper	Trim Speed Production Factor (a)
A	5.5	100	5.5	5.5	5.5	00.0	00.0	000	0.0	0000	000
B	5.5	100	5.5	5.5	5.5	00.0	00.0	000	0.0	0000	000
C	5.5	100	5.5	5.5	5.5	00.0	00.0	000	0.0	0000	000
D	5.5	100	5.5	5.5	5.5	00.0	00.0	000	0.0	0000	000
E	5.5	100	5.5	5.5	5.5	00.0	00.0	000	0.0	0000	000
F	5.5	100	5.5	5.5	5.5	00.0	00.0	000	0.0	0000	000
G	5.5	100	5.5	5.5	5.5	00.0	00.0	000	0.0	0000	000
H	5.5	100	5.5	5.5	5.5	00.0	00.0	000	0.0	0000	000
I	5.5	100	5.5	5.5	5.5	00.0	00.0	000	0.0	0000	000
J	5.5	100	5.5	5.5	5.5	00.0	00.0	000	0.0	0000	000
K	5.5	100	5.5	5.5	5.5	00.0	00.0	000	0.0	0000	000
L	5.5	100	5.6	5.5	5.5	00.0	00.0	000	0.0	0000	000
M	5.5	100	5.5	5.5	5.5	00.0	00.0	000	0.0	0000	000
N	5.5	100	5.5	5.5	5.5	00.0	00.0	000	0.0	0000	000
etc.											

(a) "Trim-Speed Production Factor" represents the "Lbs. Per Inch Trim" per 100 feet of "Speed."

FIG. 7

"Condensed" Comparative Statement. This is supported by a "detailed" statement containing complete information and both comparative reports are sent to all contributing companies.

problems that present themselves and the results that have been attained.

In general it might be estimated that the average efficiency of all steam plants has been increased 5 to 8 per cent and that paper machine operation improved several per cent during the past few years. More efficient operation, together with the installation of new and more productive equipment, has resulted in a marked reduction of operating or "conversion" costs. While it is impossible definitely to calculate this saving to the industry, it has been estimated that there has been an average reduction of approximately 12 per cent in this phase of operation.

The broad viewpoint of management in the news print industry has made possible the application of sound production principles by the many able executives. Visible progress has been made and this will doubtless be maintained and improved as time goes on, since a large majority of managers are progressive and searching for every possible means to assist in reducing costs and increasing efficiency.

The benefits derived by the exchange of data between mills, directly or indirectly affects all the departments of a paper mill. Moreover, practically every plant that has exchanged this type of information has been able to find ways and means to increase efficiency and reduce costs. The comparative data has served as a searchlight to uncover weak points, and, together with the economic pressure to reduce costs, have been a stimulus to the management and men of the various companies to develop and make use of every factor that affects the operating efficiency of the whole plant.

The entire industry has been raised to a higher level of productivity as a result of the higher efficiency of operation, since waste of materials has been reduced to a minimum and more and better work is being accomplished in less time than ever before.

New Belt Conveyor Data Book

Of practical use to engineers, plant operators, and all who use belt conveyor equipment is the new Link-Belt Company's 144 page Belt Conveyor Data Book No. 615, just off the press. This 144 page book contains new formulæ—new data—never published before. There are many pictures of conveyor installations, as well as of the idlers, return rolls, and other parts, to show their detailed construction.

The most advanced designs of belt conveyor construction are covered—such as the Link-Belt Anti-Friction Idler, equipped with Timken roller thrust bearings.

This anti-friction idler is made at the Ewart plant of Link-Belt Company, Indianapolis, to tolerances that are closer than have heretofore been attempted in the manufacture of belt conveyor idlers in belt conveyor history.

This book really goes hand in hand with the Link-Belt Company's Typical Elevator Book No. 680, and the Link-Belt Silent Chain Drive Data Book No. 125, as in each of these three publications—in line with the growing policy of the company—a deliberate attempt is made to so tabulate and arrange the fundamental facts, figures, and examples, as to make it easier for the prospective or potential user of such equipment, to do his own designing, and selecting, if he so chooses.

Layne Well Water Systems

Layne & Bowler, Inc., patentees and manufacturers of Layne pumps and well screens, of Memphis, Tenn., have just issued a beautifully illustrated catalog describing the Layne System, a method of producing large quantities of water from wells at minimum expense, perfected as the result of forty years of experience in deep well construction.

Many of the leading paper manufacturers have adopted Layne well systems and a section of the catalog is devoted to reproductions of photographs of the installations at some of these plants. This valuable booklet also contains a wealth of information for readers interested in water supply, including much interesting engineering data.

To Build Sulphite Mill at Sacramento

[FROM OUR REGULAR CORRESPONDENT]

SACRAMENTO, Cal., July 21, 1927.—Plans have been announced for the erection of a $700,000 sulphite pulp plant here as the first move in a manufacturing program said to be contemplated by the Sacramento Development Company, $2,500,000 corporation of which Sumner L. Bump of San Francisco is president. The company recently filed incorporation papers with Secretary of State Frank C. Jordan here after organizing under the laws of Nevada.

The Freeness Test in Roofing Felt Manufacture

By Philip W. Codwise *

Although the testing for freeness has been generally adopted in connection with the manufacture and the use of wood pulps, and especially with regard to groundwood pulp, yet the freeness tester has not received such detailed attention generally throughout the branches of the paper industry utilizing rags as the basic material; this statement applies with particular force to the mills engaged in the manufacture of rag felt, or roofing felt, so-called. To our knowledge, no published data is available upon the freeness characteristics of the stock used in the roofing felt industry.

The freeness test consists in determining the rate at which fibers form, from a suspension in water, and tend to resist the passage of water through them; this test is a measure of the behavior of the stock on the papermachine and also, to a certain extent, a measure of the qualities of the finished product. There are various types of instruments for determining freeness which produce satisfactory results, but there is none that may be considered a universal standard at present. In the absence of such a standard instrument we, some time ago, designed a laboratory freeness tester which has proved to be of wide use with various types of stock. It is with a modification of this instrument, made so as to be particularly suited for roofing felt stock, that the results herein described were obtained. This instrument determines directly the rate of sedimentation and subsequent passage of water through the stock. The results are reported in terms of the time required for the process to take place. Although similar in certain respects to instruments previously described[1] yet it differs in certain features and, as duplicate instruments may be easily and cheaply made in the laboratory and standardized against each other, we believe it will be of general interest.

The stock used in roofing felt manufacture is desired to be decidedly free as a general thing, but it is necessary to vary the exact freeness according to the requirements of the particular product. Roofing felt is, with a few exceptions, manufactured in this country upon a single cylinder machine and its caliper may easily vary from 0.020 up to 0.100 inch according to specifications. The desire is for an open texture sheet and the result is an extremely free class of stock which is beaten quickly and with sharp tackle. Our experience with freeness testing of this type of stock covers quite an extended period of time and the results of our observations may be of certain interest, especially to those who believe this stock to be of such type as to be not susceptible to freeness control.

There is no question but that freeness testing in this case assumes a somewhat different aspect than in the case of groundwood pulp. This is due largely to the fact that the roofing stock throughout its refining, and even when ready for the machine, consists largely of fiber bundles and of comparatively large aggregates which tend to clot together and may cause annoyance. We have found that, under the conditions to be described, a uniform mat of appreciable thickness is formed and that, when reasonable precautions are observed, check results, within one or two seconds, are easily obtained.

Description of Freeness Tester

In order that the results may be most intelligible, we will describe this freeness tester, and our particular mode of operation, in detail. Our purpose in adopting the conditions as described has been to eliminate as many variables as possible and to obtain as great a range of figures as possible applying to distinct conditions in felt manufacture. When it is stated that we have obtained figures ranging from 8 seconds up to over 200 seconds on materials connected with felt manufacture it will be seen that the object has been attained with a certain degree of success. It may be pointed out, however, that other types of testers may be used for this work; for instance, felt stocks give figures upon the Canadian Standard freeness tester ranging in general from 500 and 700 cc. In order to avoid any possible confusion in the interpretation of the results, it may be pointed out that, with the tester here described, the higher figure, i.e., the larger number of seconds, represents the slower stock, whereas with certain testers from which the water delivered is measured the higher figure, i.e., the larger volume, represents the freer stock.

The accompanying drawing, Fig. 1, gives a general idea of the instrument. It may be described briefly as a large diameter glass tube, of suitable length, fitted upon one end with a wire screen and with an arrangement for sealing the bottom of the tube and subsequently releasing the same to give an unobstructed flow through the wire screen. The instrument is equipped with suitable reference marks on the tube, indicating the height of the liquid and the point to which the liquid level must fall in order to reach the standard end point. A heavy glass tube of 1⅜ inches inside diameter and over 25 inches long is fitted at one end with a 50-mesh brass wire-cloth screen which is folded snugly over the end overlapping approximately ¼ inch. A number 13 rubber stopper is then cut out in the center to a large, round hole of diameter such as to fit tightly over the tube and overlapping screen, and then is adjusted to extend over the end of the tube ¼ inch. This stopper is adjusted so as to cover the overlapping part of the screen entirely and a tight joint is then made between the rubber ring, wire screen lap and the glass tube with hot sealing wax which is poured around it and worked well in. A somewhat smaller stopper, such as a Number 12, is fitted to the lower opening in the rubber ring and is adjusted to make a close fit with the wire screen, and this holds the test solution in place without any leakage until the moment of starting the drainage.

Method of Operation

Our method of operation is as follows. A quantity of stock equal to approximately 10 grams dry weight is squeezed to uniform moisture content in a heavy cloth or towel. Exactly 3 grams of this squeezed stock is weighed out, taking care to get a representative sample, and dried bone dry with an electric flatiron. The weight of this sample is then determined and from this bone dry weight the amount of squeezed stock required for a test is calculated from the following table:

Bone Dry Weight of 3 g sample	Take for Test
0.85	12.35
0.90	11.68
0.95	11.08
1.00	10.50
1.05	10.00
1.10	9.55
1.15	9.14

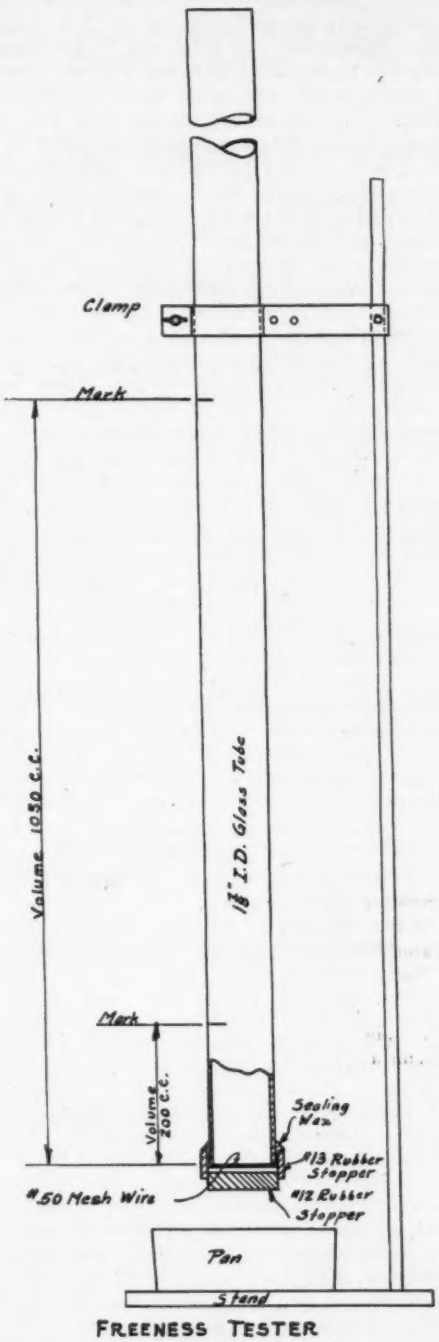
The above table is based upon always using exactly 1050 cc. volume for a test and is calculated upon the basis of 1 gram bone dry stock to 300 cc. of water.

In operating the instrument the rubber stopper is inserted so as to fit close to the screen and seal it and the tube is then filled with exactly 1050 c.c. of the test solution prepared at a definite consistency, as noted above, and at an exact temperature of 80 degrees. This mixture is made by stirring the proper amount of squeezed stock with a convenient quantity of water in an electric mixer and then diluting to exactly 1050 cc., taking care that all the water used is at a temperature of 80 degrees F. The final mixing is conveniently done by pouring several times from one cylinder graduate to another; it is then poured immediately into the freeness tester and the test is carried out without any delay; the whole process should be made as continuous as pos-

* Superintendent of Laboratories, The Beaver Products Co., Inc., Buffalo, N. Y.

[1] Paper Oct. 11, 1916 and Pulp and Paper Magazine Mar. 1, 1927.

sible. When the stopper is released the stop-watch is started simultaneously and when the level of the liquid has dropped to the mark representing the end point the watch is stopped and the number of seconds which have elapsed is called the freeness test. The end point mark is established at a point where there is



FREENESS TESTER

FIG. 1

200 cc. of liquid and stock remaining in the tester; this point, we find, is close to 4½ inches above the screen. The proper mark for the end point is established individually, for each tester and each new instrument is standardized against the standard one and the point is adjusted to take account of any individual differences in instruments; in this way check results are easily obtained with the different freeness testers, of which we have a considerable number.

Precautions to Observe

The chief precautions to be observed are that the temperature is exactly at 80 degrees F., that the consistency is exactly at that of 1 gram bone stock to 300 cc. and that exactly 1050 cc. of the mixture is used for a test. By observing these precautions accurate results may be expected when the proper end point mark has once been established. One of the advantages of this instrument is that it has very few mechanical parts to get out of order and that it is easily repaired in the laboratory. The instrument is designed for rapid control work and lends itself very well to this purpose as it is simple to operate; furthermore, the interpretation of its results are easily explained to and understood by the inexperienced. From a mechanical standpoint it may be pointed out that care must be taken to assure that the removable stopper fits tightly enough so that there is absolutely no leakage at the valve prior to the time of starting the test; it is also necessary to see that no leaks occur around the seal between the rubber ring, wire cloth and glass tube. If these details are attended to and the screen is kept clean by washing out the instrument immediately after use concordant results may be expected at all times.

It is difficult in an article of this kind to give data that will comprehensively cover the variety of cases that may arise in felt manufacture. The differences in the character of the raw materials and of the product are such that a complete description is impractical. We will, therefore, give some representative examples and conclude with some graphs showing the history of the stock from the raw sheet to the finished product. However, in order to make this description intelligible to those not entirely familiar with the nomenclature used in the roofing felt industry, a word of explanation will now be given.

Roofing Felt

The basis of felt weights is the weight of 480 sq. ft. and the usual weights run from 20 lb. up to 85 lb. The felt is customarily spoken of as "light," "medium" or "heavy"; in this connection, a 36-pound or lighter sheet may be considered light weight, a sheet in the neighborhood of 50 pounds is considered medium weight, and anything over 60 pounds may be considered heavy weight. It may be added that the thickness, expressed in thousandths of an inch, in general, is numerically quite close to the weight or "felt number," running somewhat above it in the softer sheets.

In considering the representative range of freeness tests results it may be said that upon the medium and heavy weight sheets the usual limits are found to be between 50 and 90 seconds on the finished product. A satisfactory 50-pound sheet may occasionally be slightly freer than 50 seconds, but on the other hand a 75-pound sheet is usually found most satisfactory when within the higher range of the figures quoted. In connection with the light weight sheets more tolerance is allowed and the variations in different sheets is found to be greater; in general, the lighter weight sheets are of slower stock than that represented by the figures above; results up to 200 seconds are not unusual on this grade of felt.

The exact freeness test to be run upon a certain grade may depend upon the particular papermachine, but there are certain conclusions that may be reached from a general consideration of the freeness test figures. For example, a 50-pound sheet with a freeness test of below 35 seconds may be expected to be a decidedly open porous sheet, of long fibre length, and low in strength; while a 50-pound sheet with a freeness figure of above 90 seconds may be expected to be a hard, stiff sheet with a tendency to be slow in saturating quality. Again, in running heavy weight sheets, such as a 75-pound, too low a freeness figure must be avoided; for instance, as low as 50 seconds in this grade would be expected to cause trouble upon the papermachine and to show a tendency to check or open up either during manufacture or

during use. In connection with the light weight sheets it may be said that this felt will not, as a rule, run below 65 seconds in freeness; on the other hand, as already noted, it may often run up to 200 seconds.

Application to Mill Control

In conclusion, we will give an outline of the application of the freeness test to mill control. The details of this would vary in the different mills due to differences in beater room practices and systems. We will, however, confine our description to the conventional practice wherein the stock is all furnished into the beater at an early stage of the disintegration process, i.e., all of the furnish is beaten approximately the same length of time, disintegrated well in the beater, and then is finally jordaned to a moderate extent prior to running on the machine.

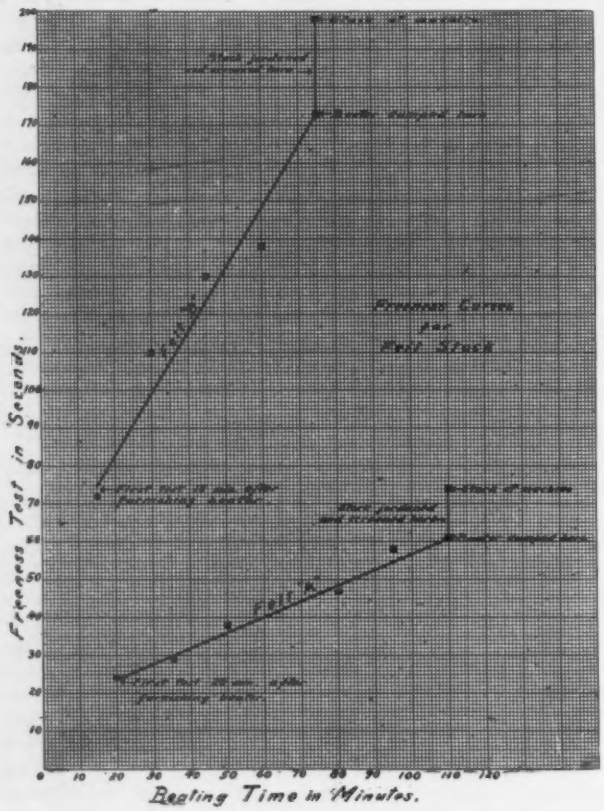


FIG. 2

By taking tests at definite intervals during the beating process and then at the vat of the machine a detailed history of the stock may be obtained. We have done this for two different types of felt and the results are plotted on the accompanying diagram, Fig. 2. Felt "A" is a heavy weight sheet, being of 79-pound weight and the curve here shown is representative of a satisfactory grade in this weight. Felt "B" is a light weight sheet, being of 35-pound weight and the curve is representative of the cype of light weight sheet requiring high strength combined with moderately rapid saturating characteristics It will be seen, from the close adherence of the points up to the time of dumping the beater to nearly a straight line that the process is best represented in this way for the particular cases shown. In order to make the curves as representative as possible we have shown graphically the effect of the jordaning and screening processes and have indicated the level at which the freeness runs upon the machine. It is believed that these curves demonstrate clearly the essential characteristics of the process of disintegrating the stock for roofing felt manufacture, the most prominent feature of which is the rapid beating of the stock, with comparatively little hydration and by the use of sharp tackle combined with early and vigorous treatment, continuing until the completion of the process.

Northeastern Forest Progress

That the pulp and paper industry of the Northeast will suffer a distinct loss because of S. T. Dana's resignation as Director of the Northeastern Forest Experiment Station is made more evident than ever by the study of the 1927 Investigative Report of this station. Mr. Dana will assume the position of Dean of the reorganized orestry School of the University of Michigan. in the Fall, and his many friends in the industry in the Northeast, while wishing him the best of success in his new position, are extremely sorry to see him leave Amherst.

A study of the 1927 program of the station, copy of which has been received by the Woodlands Section of the American Paper and Pulp Association, shows that all of the nine major projects listed as under way at the present time, have some bearing on the problems of pulp wood production, and many of the fifteen minor projects are also of importance to pulp wood consumers.

The studies of growth and reproduction, cutting methods and slash disposal in the spruce and balsam forests of the Northwest, have progressed far enough to warrant preliminary conclusions which are briefly stated in this report and will be more fully covered in various bulletins, the manuscripts of which have been prepared for publication. These studies are of fundamental value to the pulp and paper industry.

Mr. Dana and his staff are to be congratulated on the progress they have made in the three years since the station was established. Basic problems of research have been attacked and at the same time the station has obtained much information of immediate value to timberland owners.

Third Machine at Gatineau Begins Production

The third machine in the Gatineau newsprint mill of Canadian International Paper Company has started and is now making paper. The first machine in the mill began production on April 14 and the second machine on May 19. The fourth machine will start soon.

These machines are designed to make a sheet of paper over twenty-one feet wide at the rate of twenty feet a second. They will have an aggregate capacity of 600 tons of paper a day and are the largest single producers thus far installed in the world.

The Gatineau mill is located in Quebec, on the Ottawa River, two miles below the mouth of the Gatineau Rover and only five miles from Ottawa.

In the valley of the Gatineau River the company has assembled 6,500 square miles of timberlands. It is estimated that these timberlands contain a perpetual supply of wood for the Gatineau mill.

To Increase Use of Union Water Marked Paper

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., July 25, 1927—E. S. Alden, of the Alden Paper Company, Holyoke, Mass., sales agent of the International Brotherhood of Papermakers for union water-marked paper, was in this city during the past week for a conference with union officials to devise plans for increasing the use of this class of paper. The conference was attended by W. R. Smith, president of the Brotherhood, Frank P. Barry, first vice president, and Arthur Huggins, second vice president. After a thorough discussion it was decided to circularize all union trade publications in the United States in the hopes of increasing consumption of the union-water-marked paper which is produced mainly in Potsdam and Taylorville, Ill. Brotherhood union officials feel that the union water-marked paper is not used as extensively as it should be by papers published by union trade organizations and the matter has been taken up with the various International unions several times in the past few years.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

Affiliated with

THE AMERICAN PAPER AND PULP ASSOCIATION

Conducted by THOS. J. BURKE, C.A., Sec-Treas

The Construction, Use and Abuse of Cost Accounts*

By Sir Arthur Lowes Dickinson

In recent years much attention has been given to cost accounting, in the use of which this country had, up to the outbreak of the war, been very backward as compared with the United States and still has much leeway to make up.

The pre-eminence in foreign trade which this country has enjoyed in the past is now seriously threatened by the competition with other countries with greater natural resources, lower real rates of wages and greater production per person employed; and while endeavors are being made, as to the success of which there is much difference of opinion, to meet this competition by the imposition of protective duties masquerading under the guise of "safeguarding industries," the only real remedy lies in greater efficiency and lower costs per unit of production and sale.

These problems call more and more for accurate knowledge of costs of all operations from the production of staple raw materials to the final stage of delivery of the finished products to the ultimate consumer either at home or abroad; and to meet this demand the construction and proper use of cost accounts are necessary adjuncts.

It seems pertinent, therefore, that in a gathering of chartered accountants some little time should be spent in considering this important subject in its broad principles rather than its details. It is perhaps to the neglect of these general principles and to the too great elaboration of details forming interesting mathematical studies rather than aids to cheaper and more efficient production that the abuse of cost accounting which is frequently observed is mainly due.

Object of Such Accounts

A necessary step to the study of this subject is to consider the object of such accounts. The first object may be stated to be a determination of the cost of what is sold in order that the producer or dealer may, by comparison with the price at which he can sell, determine whether it is worth his while to do the business and whether his margin of difference is sufficient to enable him to capture markets which are held by competitors. The most elementary instance of this is perhaps the schoolboy sum to determine the price at which a grocer must sell a mixture of two or more teas of varying costs in order to realize a certain profit. The schoolboy accepts the profit as a fact, but the grocer, if he is a wise trader, will so adjust his mixture as to enable him to make a profit at a price fixed not by himself but by general market conditions. Applying this very simple proposition to trades and manufactures in general it becomes evident that at every step the mixture of labor, machinery, supervision and distribution must be so adjusted as to allow of the sale of the product at a profit in a competitive market. Even in the case of a monopoly the same principle applies and is well expressed in the words of an American railroad president of the past, that the rates to be charged on a railroad should be "all the traffic would bear consistently with the freest possible movement of the traffic," e.g., an increase in rates may so restrict traffic as to produce lower total earnings, and vice versa.

The second object is to obtain the greatest possible efficiency in manufacture by a comparison of the cost of similar processes at the same time, or of the same process at different times. Such comparisons have been found to give most useful results and to have brought about invaluable economies.

A third object is the determination of rates of wages with reference to the cost of product as compared with selling price, of which a prominent example is to be found in the coal mining industry, where statements of the aggregate costs of mining in the different districts form the basis of ascertainment of wages in accordance with the terms of agreements negotiated between masters and men.

Cost Plus Percentage

A fourth object, which may in future be of ever increasing importance, is to regulate selling prices by reference to costs of production and a reasonable profit thereon. An example of this is to be found in contracts carried out on what is generally known as "cost plus percentage," which has been in use for many years in the shipbuilding industry and by large contracting firms. During the war the prices of many commodities were regulated by similar methods and many millions were thereby saved to the country on government supplies for war purposes. An interesting development of the "cost and percentage" method was also evolved during the war, as follows: an estimated labor and material cost was ascertained, to which was added (a) for overhead expenses, either a fixed percentage or one dependent upon an examination of accounts, and (1) for profit, a fixed percentage on the estimated cost; if the estimated cost was exceeded no profit was allowed on the excess, but if the actual cost

* From The Journal of Accountancy.

was found to be less than the estimated a certain proportion of the saving was allowed to the contractor as additional profit.

Fifthly, costs are an important element in the consideration of applications for protection under the safeguarding of industries act, not only by the comparison of cost with selling price, but also as evidence of efficiency or otherwise.

Turning now to the construction side of the question, the simple elements of costs are:

(1) Raw material.
(2) Direct labor.
(3) General works overhead.
(4) Selling and distribution expenses.
(5) Administration.

Material is represented by purchased goods which may and frequently do consist of material brought to a certain stage by previous manufacturers, while in some few cases, such as manufacturer of steel products owning ore and coal, limestone, nickel, manganese, etc., mines, it may be literally prime products of the earth. Direct labor, i. e., labor actually expended on the manufacture, requires no comment. In addition to direct labor, there must always be a considerable amount, such as power, light, repairs, general stores, foremen and timekeepers and factory superintendence, etc., which cannot be attributed to any particular operation and must be spread in a more or less arbitrary manner over all the work in the factory or department of the factory. These, together with other items of similar character, form a group of items generally known as factory overhead. This group is as much a part of the cost of manufacture as are the direct charges of material and labor, and consequently all products turned out must bear their share.

Direct Labor and Material Cash

To determine the direct labor and material costs is a comparatively simple problem, although it may often involve a huge mass of figures and in consequence, if it is not to cost more than it is worth, involve the use of the most efficient labor-saving devices. The time of the operatives expended each day on any particular job upon which they are employed is obtained by the foremen and timekeepers, generally by the use of time clocks and cards or by slips on which the time on each job is noted. From these records, firstly, the pay sheet is prepared, and secondly, an analysis by jobs is prepared, either on analysis sheets, or preferably, if the volume is sufficient, by a system of punched cards and electric tabulating machines. These two summaries are agreed and the job order summary then goes forward into the costing department. It is usual to give job order numbers of each separate operation for which a cost is desired and a separate series of standing order numbers to indirect or general labor, with such subdivisions by departments, shops and even operations or machines as may be required. The result is a complete summary of all wages paid under the headings of each operation for each job under way as well as for each separate expense heading into which wages enter.

Material originates in the material and stores departments, which are charged with the function of maintaining sufficient supplies to meet the needs of the works. These departments may be quite numerous and separated for different kinds of materials. The basis of charge for cost accounts is a requisition on these departments for particular jobs, and an analysis of all these requisitions made, if there is a sufficient volume, by punched cards and tabulating machines, supplies the quantities and values to be charged to each order number, whether job or standing. This analysis also forms the basis for Credits to the different material and store accounts.

The money rate at which materials are charged out of store is of some importance. The two methods in general use are, either to take the average price shown on the stock account for that material, where individual stock accounts are kept in both money and quantity, or the price of the quantity that has been longest in stock, until that is exhausted. This distribution is not, however, as simple as that of labor so far as it affects either costs or stocks.

Limitation of Loss of Material

In factory operations there must always be loss of material and it is evident that the limitation of such loss is an important element in keeping costs down to a minimum. The loss may be due either to necessary wastage in the operations or to spoilage due to bad or careless workmanship. The latter can only be controlled by the watchfulness of the foreman, assisted by standards based on past experience as to the number of good pieces that should be made out of a given weight of material. A third cause of loss is the direct abstraction by workmen of finished products, which in the case of small pieces is quite easy and can only be discovered by a search of workmen as they leave the premises. Such search is a difficult and invidious operation and whether or no it is to be made must depend on a comparison between the value of the material and the cost of the friction among workpeople that might be caused thereby. Such abstraction amounts to sheer dishonesty, and while it undoubtedly does occur it may perhaps be considered as an exception and not the rule.

All waste material appears ultimately as scrap, which is frequently of considerable value and may vary from dust and small shavings up to pieces of considerable weight. Scrap is one of the major difficulties in accurate costing and must be estimated on a conservative basis. One method is to treat as the weight of scrap resulting from any particular operation the difference between the weight of the material charged into the operation and the weight of the finished product credited out. But often the only check upon the accuracy of the estimate is the selling weight when disposed of; and the frequency of check depends upon the system of storing. If separate piles are kept for different kinds of scrap and the piles are not allowed to become too large the risk of error is much reduced, but if all scrap of each kind, or worse still, of all kinds, is kept on one pile from which deliveries are made and to which fresh scrap is added so that the pile is never exhausted the risk of error is greatly increased and cases have occurred where it has amounted to very large money figures both relatively and actually.

Similar difficulties arise in the case of bulk materials unless care is taken to keep each purchase, or group of purchases over a short period, in separate piles. Cases have been known in which pig-iron, for instance, stored on soft ground, has owing to its weight, sunk in, so that when the pile was exhausted a considerable quantity had disappeared below ground and a shortage resulted, as the expense of mining operations to extract the whole of the vanished material was not justified. Ore piles have been found to be short when finally exhausted due to undiscovered errors in the methods of charging out to operations.

Reducing Possible Errors

In order to reduce possible errors in quantities to as small dimensions as possible and also to absorb the cost of handling stocks it is usual practice to add a percentage based on past experience to all deliveries charged out to order numbers. Similarly, where scrap cannot be weighed out at each process it is customary to credit it out on a percentage of material charged, based again on past experience. These arbitrary percentages are a two-edged sword, for if the percentage added is too low or the scrap credited is too high costs may be brought out lower than actual, while in the contrary case work in progress will be valued too high; there will be a consequential error either way in the book figures or stocks. There is, however, an ultimate safety valve in that proper continuous methods of stock-taking will disclose the errors from time to time, so that while the individual costs may be wrong the aggregate financial results may not be materially affected.

It will be seen that the treatment of labor and materials indicated above has the further effect that it makes practicable a book

record not only of work in progress and finished, but also of unused materials, stores and supplies; founded on the booking of all invoices inwards in quantity and value and on similiar records, plus or minus approximate percentages, for consumption. The advantages resulting from this book record are that it dispenses with the labor and expense of a stock-taking at one particular date, which naturally interrupts manufacturing operations; and by permitting different sections of materials and stores to be verified by an inventory at odd dates and then adjusted with the book records stock-taking can be spread evenly over a fixed period.

Money Values of Materials

It may not be amiss here to refer shortly to different methods of keeping the money values of materials and stores. In some cases it is customary to keep an account of every unit both in quantity and value, but this is necessarily an expensive method and one which should not be adopted unless it is absolutely necessary. A second method is to divide them into classified groups, each group consisting of somewhat similiar items, and then, while keeping an account of each unit in quantity only, with a note of the unit price as this varies, record aggregate money values for each classified group only. In this case a physical stock-taking of each group would be taken periodically and extended in money values, and any difference between this value and the book value investigated and adjusted. Assuming, say, twenty-four such groups, this would mean that two groups would be thus verified each month, by a small staff kept continuously engaged on such work, in order to complete the entire stock-taking over a calendar year.

Another advantage resulting from such a system as has been indicated is that it becomes possible with a remarkable degree of accuracy to determine month by month the approximate cost of all sales for that month and so enables the administration to have before them early in the following month a complete statement of profit and loss, prepared on a conservative basis and supported by the results of completion of individual orders and contracts. These latter will be affected by the method adopted for distribution of factory overhead, but if a careful watch is kept over the amount of such overhead carried in stock, no serious error in the aggregate profit is likely to occur.

Cost of operations will necessarily vary from period to period, according to the change in price and wages, and perhaps even more due to the variation in overhead arising from the change in the percentage of factory capacity in use from period to period. As long as production is exceeding sales it is a simple matter to take the costs of sales for the period as a charge against proceeds of sales, and carry the remainder of the cost into stock. When sales exceeded production it becomes necessary to withdraw from stock the cost of the excess sales, either at the average of the costs charged into stock from time to time or at the cost of that which has been longest in stock. As long as there is no continuous rise or fall in costs this method is probably sufficiently accurate for all purposes, but when there are material changes in values in one direction it will be necessary to adopt the more correct method of charging as cost of sales not the cost for the period but the cost at which units have been charged into stock until stock at the beginning of the period has been exhausted, and then only to take the cost of the period for the balance.

In such conditions the first method would, in the case of falling prices, tend to inflate stock quite seriously with possibly disastrous results later on, while in the case of rising prices an unknown reserve would be built up. This is an instance of the necessity, in dealing with cost accounts, of the most watchful regard to principles and of the danger of neglecting principles and trusting to machine-like decimal accuracy.

Should Be Prepared Promptly

It is of the utmost importance that such monthly statements should be prepared promptly in order that the management may be in a position to deal without delay with any adverse tendencies disclosed therein. Results of individual contracts and orders disclosed months after they have been completed and delivered are of little or no use to anyone; nor are profit-and-loss accounts, prepared months after the period to which they relate, of use to the management, except for presentation to shareholders and declaration of dividends. Statements thus delayed may perhaps be compared to a nurse who should inform the doctor of the temperature and pulse of her patient some weeks after they were actually recorded.

In the United States it was common practice even fifteen years ago in large industrial undertakings to have production statements before the officials in the first few days of the following month and complete profit-and-loss account, by the 10th of that month, and today these figures are frequently available within a few days of the close of the month to which they relate.

Having dealt with the principles involved in the distribution of materials and labor, it remains to consider the more difficult question of the distribution of overhead expenses, upon which there are many differences of method and opinion.

The simplest and perhaps most useful method is to take the total overhead expense and divide it either over units of manufacture or productive wages or of labor and material costs. Where a factory is producing only one kind of product which passes through all processes the results of such methods will be sufficiently accurate for all purposes. In the case, however, of a factory making various kinds of products, passing in the process through some only of the many departments, such a method may introduce serious errors, as, for instance, charging a product made entirely by hand with a proportion of the cost of a power plant used only in other departments of the business.

Other Methods Devised

To meet these conditions other methods have been devised. While it is not possible (by the definition of overhead expense) to charge any of it directly to a particular job or operation it is evident that many expenses may be treated as direct charges either to a particular department or even to a particular machine in that department and, the number of hours expended by that machine being recorded, a basis of division by machine hours or man's time or pay can be easily adopted.

In the first place, therefore, overhead expenses would be divided into direct charges against departments and into charges common to all departments; the first group would again be divided into those appertaining to particular machines and operations in that department, and into those which are common to the whole department but cannot be allocated directly to any machine or operation. In this way the overhead may be divided into a large number of classes and the problem then becomes one of distribution, and this can only be decided by a careful study of the nature of the various operations. In some cases floor space occupied may be found suitable; for others, machine hours; for others again, man hours; and there are also in common use distribution over units manufacture, direct wages cost or direct wages and material cost.

It will be seen that the method here outlined, if carried out in full, is very elaborate and involves a great amount of detailed analysis. Its use is only justified where a large diversity of products are manufactured, the operations on which are so dissimilar that nothing short of such a division of overhead expense will give sufficiently accurate results to enable a close competitive selling price to be determined. Where this is not the case, and in simple industries, such as mines, steel works and factories putting out only a limited variety of standard products of a similar nature, this elaborate system of distribution is hardly justified and the simpler system of dividing all overheads as a percentage on labor will produce sufficiently accurate results. A simple instance of wasted elaboration in determining costs was found in the course of an investigation of the accounts of two engine works for the purpose of amalgamation. Each concern had a foundry in which all its castings were made, the weights varying from a few ounces up to several hundred weight. One concern charged all its

castings into its engine costs at 1d. a lb., while the other had an elaborate system of arriving at the cost of each casting. The latter concern objected to the rough-and-ready 1d. per lb. as entirely inaccurate, and to settle the question the accountants took a specification of the standard engine, worked out the cost of all the castings individually and so arrived at an average cost per lb. which was found to be within a negligible percentage of the 1d. per lb. adopted by the other concern. This is probably a good instance of how expert knewledge of manufacturing processes backed by careful tests costs may save a large amount of time and expense and still get accurate results,

Another principle that must always be remembered in relation to the overhead expenses is that when the output of a factory has reached a point at which it can absorb the whole of the overhead and still leave a reasonable margin between cost and selling price, any additional product can be either manufactured at a higher cost or sold at a lower price because it is no longer necessary that any overhead expense should be taken into account in arriving at its cost; in other words, any slight margin of selling price over labor and material cost will yield a profit and make it worth while to continue production. Similarly, when work is slack and orders can only be obtained at prices which in ordinary times would be unremunerative, it may pay to take them at a small profit on labor and material only in order to reduce the burden of overhead and so make a profit on the regular business.

A Common Method of Dealing With Overhead

One common method of dealing with overhead expense is to adopt as a basis certain percentages or other allocations based on past experience and to treat these as standard, charging costs and crediting nominal accounts to which the actual expense incurred becomes a charge. The proof of the accuracy of the distribution is in the approximation to a balance over any period in these nominal accounts, and the percentages should be sufficient to leave in normal times a small credit balance thereon.

Whatever method is adopted, an important question in connection with overhead arises when a factory running on normal production with a steady percentage of overhead falls upon bad times and its production is so reduced that on the normal distribution the overhead is not fully absorbed by the lessened production. Either the overhead should be spread at a greatly increased percentage over the actual production, or the normal percentage should be continued and the unabsorbed overhead charged to an idle plant expense account. In arriving at profits, idle plant expense must be provided for, but it would seem better practice to provide for it by a charge direct to profit-and-loss account rather than a charge to orders, i.e., to costs, thus unduly inflating the latter and perhaps tending to a further restriction of production on the ground that the product can no longer be sold at a profit.

There is some difference of opinion, even among accountants, whether or not rent and interest should be included in overhead expense and treated as part of the cost of the products. The sounder view seems to be that both of these items represent either a part of the products or a fixed contribution in lieu of profit paid to those who provide a part of the necessary capital; i. e., fixed capital in the case of rent and either fixed or circulating in the case of interest. These two items in any case only represent the charge for the use of part of the capital and if they are to be included in costs it is surely inconsistent not to include a charge for the rest of the capital employed. Moveover, of two firms with the same amount invested and making identical products, one may borrow half its capital and the other none, and it is surely inconsistent to suggest that the cost of the product in the first case is higher than in the second.

A Difficulty in Determining Interest Rate

The advocates of including interest as part of costs are in another difficulty in determining the rate of interest to be charged. The old theory of economics was that it was the rate at which money could be invested entirely without risk. In the closing years of the last century the nearest approach to such a rate was that yielded by 2¾ per cent. Consols, then quoted at considerably over par, and yet a purchaser in, say, 1898, would, by holding until 1916, have lost by depreciation in market value as much as the whole interest collected during the intervening period of years.

In fact, money is invested in industrial enterprises in order to obtain an annual return thereon, and it seems inconsistent to claim that in the case of an investment in governmet securities the return is to be deemed interest, but if in commerce partly interest and partly profit. It is true that in deciding where to place his capital an investor measures up the risk he is incurring and that this determines in the long run, the rate of return, i. e., the price at any time for capital employed in different businesses and does not justify an arbitrary and illogical division between interest and profit.

While the balance of argument would seem to be decidedly against interest being an element of cost, it is clear that the time taken over in operation is a material factor in its cost, and one which is not taken into account in the methods of determining costs already set forth. If two articles involve the same amount of labor and material, but one takes twice as long to make as the other, there should be some way of indicating its excess cost by reason of its greater use of capital facilities provided. Factories and machinery are usually erected with a good idea of the return to be obtained from their use and this rate of return, calculated on the capital value of all facilities used for the manufacture of the two articles for the time during which they were so used and added to the labor, material and overhead cost would at once show that one had cost more than the other. Unfortunately this method would include in cost the whole of the estimated profit and is therefore quite inadmissible, and there seems no reason for charging interest at any lower rate. Further consideration shows that what is realy wanted is a comparison between the profit realized on the two articles, i. e., the interest earned on the capital employed in each case. This can be readily obtained as a statistical figure by comparing the difference between selling price and cost (as ordinarily determined) with the capital facilities used in producing each, taking into account the time for which they are used. Thus, if the surplus of selling price over cost for two products be X and Y respectively, the capital facilities employed P and Q, and the time for which they are employed H and M., then the return on a unit of capital for a unit of time will be $\frac{X}{P \times H}$ and $\frac{Y}{Q \times M}$ respectively. The relative value of these expressions will indicate which commodity produces the greater profit. If one shows a smaller return than the other it then must be determined whether its manufacture is so essential that it must be continued in spite of this lower return, or whether it can be purchased outside to greater advantage or can be abandoned altogether in favor of a greater output of the more profitable article, bearing in mind that any considerable increase in units produced may result in reducing the selling price to a greater extent than the saving in overhead expense due to the greater production, and so reduce the profit to or even below that earned by the other product which it is proposed to discontinue.

Another Method Commonly Applied

In considering a complete, detailed cost system on the principles outlined above it should not be overlooked that there is another method quite commonly adopted, much less costly, and often quite as accurate and satisfactory, particularly in machine shops not engaged in producing standard products but manufacturing to the order and special requirements of customers. In such a factory, while the finished products are not standard, they usually involve a large number of standardized parts, that it is in the assembling, perhaps and in a small number of special parts, that the difference occurs. In such cases it is often customary to work on the basis of test costs, i. e., specially skilled men estimate the ma-

terial, labor and overhead for each operation and so arrive at the approximate cost of the whole, taking care that their estimates are on the safe side, i. e., are over and not under the probable cost by a safe margin. On the basis of these estimated costs contracts are taken and all finished products are valued out, the stock of work in progress, raw material and stores being represented in the books at any time by the difference between the total charges to the factory and the credits for finished goods shipped out.

This method has been used for years by one of the largest factories in the United States; a staff of skilled men being continuously employed in calculating and revising test costs; its accuracy was proved each year by very close agreement between the book stock figures and the result of the physical stock-taking.

Difficulties in Division

Difficulties arise in determining the division of costs between two or more products derived from the same raw material which pursues a common course through certain operations up to the point at which the two products are separated and are thereafter submitted to different operations before they emerge as finished products. The extreme case is that in which one or more of the products can be treated as a by-product or residual, either owing to the relatively low value or to the small quantity produced. In such cases it is usual to credit to the cost of the main product the selling value of the by-products, less some percentage to cover cost of sale.

At the other extreme is the case in which all products are equally important and a cost for each common to all or some few of these products is desired. This can be obtained by dividing them either:

(a) in proportion to weight or quantity produced, or

(b) in proportion to selling value of the final product, or

(c) in some arbitrary proportion based on experience of relative values over a series of years.

It has happened that, by changes in markets, products that were at one time treatable as by-products increased in importance so that they become main products, while the former main products become by-products. To show concisely the complications involved, assume two products, A and B. As market conditions vary A may pass from a by-product up to equality with B and pass B, while B may descend to the position of a by-product, A becoming the main product. In this way each one of the methods of determining costs mentioned above may theoretically come into force in turn.

There is no lack of illustration of the occurrence of these conditions, e. g., by-product coke ovens producing, coke, gas, sulphate of ammonia, tar and many others; metal separation where a large number of metals, e. g., copper, nickel, gold, silver, etc., may all be obtained in greater or lesser quantities from the same ore; and oil refineries where large quantities of the different products of petroleum are obtained out of the same crude oil.

Factory Costs and Selling Costs

It must not be overlooked that for most purposes there are two costs, viz.: (a) factory costs, i. e., labor, material and factory overhead only, and (b) selling costs, which would also include selling, distribution and administration expenses. Factory cost broadly represents the cost to the producer of his finished product delivered to stock, while selling cost includes also the expense of selling and distributing which still has to be incurred before the final profit can be determined. In theory, administrative expenses should be divided between factory costs and selling costs, but in practice it is more usual to treat it as a separate item to be met out of the excess of sales over selling cost.

In many cases, such as contracts, special orders, etc., goods are sold before they are manufactured; factory cost and selling cost, excluding distribution, are then in effect identical figures. For accounting purposes the distinction between the two is chiefly of importance in the valuation of stocks on hand, which by conservative convention are usually taken at factory costs only, as assuming, that is, that this is less than market value. If the products are in fact sold, selling cost (excluding distribution), if less than selling price, may safely be used. Any greater valuation is an anticipation of profit which may not be realized, although there are cases in which such anticipation on a conservative basis may be justified and even necessary, e. g. in large contracts extending over a period of years.

It has been argued that factory cost for stock-taking purposes may be taken at date of stock-taking, instead of that which actually went into the product. It is submitted that this is an erroneous principle and entirely loses sight of the meaning of the word "cost;" in effect, it is taking into stock the profit due to goods having been manufactured on a lower basis of prices and wages than prevails at the time of stock-taking, a profit which can only be realized by the subsequent sale of the goods. It is, however, clearly the function of the cost accountant to determine not only past but present costs, and for this purpose it may often be necessary to adjust this actual cost by charging labor, material and overhead expenses at prevailing rates at the time. Where this is done the increase or decrease in costs resulting from the use of current instead of actual rates should be shown separately.

Use To Be Made of Costs

This sketch of costing methods and of some of the difficulties and problems involved therein leads naturally to the consideration of the use to be made of the costs when obtained, and the factors which should guide when settling the methods to be adopted.

First and foremost must come the nature of the information which practical managers and heads of departments desire to enable them to get the results out of the business. Secondly, there is the information which is required by the directors, who want to be able to judge of the progress and results of the business by a summary of figures as short and concise as possible. Thirdly there are the statistical accounts and figures required by government departments to form the basis of trade reports relating to the whole country, e. g., coal. Lastly, there are the amounts and statistics required for the purpose of wage agreements with employees, when such exist, and for the shareholders who in these days are too often left with little or no information that would be of use to them in forming a judgment on their investment.

It may be safely said that of these four groups the first is of the chief importance, and that if the management are getting all they require for the efficient conduct of the business the other information is easily computed. A statistical department should be a necessity in any moderately large undertaking, to which department the cost and accounting returns should go to be examined and compared and put in the form that will be most useful.

Then again, some returns are of immediate and urgent importance and will be useless to the management if they are submitted more than a few days after the close of the period to which they relate. If presented months later they are in fact matters of history, interesting no doubt to statisticans and historians, but relating to a state of affairs long since passed by. A danger in a statistical department is that it is apt to acquire a craze for statistics as such and to prepare figures which are of no particular use to the management and from the business point of view are mere waste of time. As a practical instance may be noticed the case in which the costs of an operation which is common to a number of orders are found to vary from 3s. 6d. per unit down to 6d., for reasons peculiar to each order and well known to the technical management. The statistical department goes to some trouble and expense in working out the average cost of the operation for all orders, thus providing a figure not only useless but misleading, and depending on each occasion on the proportion of the different orders in hand over the period in question.

A first essential in designing any system of cost accounting is to find out what are the essential accounts and statistics which the management require in their daily work; to improve and elaborate

these in consultation with the management; and to produce a system which will give these results and waste no time in getting out others or in making elaborate calculations which may be mathematically interesting but are practically useless.

A curious instance of erroneous use of statistics may be noted in a pamphlet recently issued in connection with the coal strike. Tables were presented showing the minimum wage fixed for different classes of labor in the various districts in the country, which in one class ran all the way from 47s. to 82s. per week. At the foot of the page the average minimum wage for the whole country was given as 71s., a figure of no real practical importance. The pamphlet, however, went on to make the astounding statement that in the whole country no man of this class could earn less than 71s. per week, and a similar error was made in all classes.

A great quantity of statistics of the coal industry have been published as evidence in the various inquiries that have taken place from the commission of 1919 to that of this year. The great bulk of them are both valuable and interesting, but scattered about among them may be found some that are merely interesting figure exercises of no practical importance and which illustrate the foregoing criticism of the preparation of useless statistics.

A word of warning against the free use of average figures may not be out of place, even in this assembly of accountants, in view of the misuse of such figures which frequently occurs. To take an average cost of an operation where the individual costs are more or less the same and fluctuations are not due to any intrinsic difference in conditions, is not only justifiable but useful, as the average figure for the purpose of accounts and statistics is quite a reliable guide. When, however, conditions vary materially in the different unit operations which go to form the average, the use of the average figure is most misleading and may easily be dangerous. The statistics of costs and wages in the coal industry which have been much before the country of late afford a good instance. The published figures of costs, proceeds and profits or losses are prepared for 13 different districts and the figures for each district are an average of all the undertakings in each district. In any particular district,, as has been shown in evidence, the results may vary from, say, 6s. per ton loss in a mine at the lower end of the scale to 6s. per ton profit at the other end, so that the average figure of, say, 2s. 6d. per ton profit gives no idea of the real conditions prevailing, as there is no pooling of profits and losses. Similarly, the average profit or loss for the whole country, the average wages cost and earnings per person employed, taken by themselves, are of very little real use except to show what the results might be if all the mines were in fact combined in a single undertaking.

Similarly misleading average figures may be found in many other cases, and it is imperative, therefore, that those engaged in the preparation of cost accounts and statistics should use every precaution to see that the figures they produce are accurate reflections of facts and not merely misleading generalities.

Care in Preparing Summary

When there is in being a complete cost system great care should be exercised in preparing summary statements for the use of officials and directors, who are usually busy men desiring to leave all detail to their subordinates and dealing themselves only with important variations. Frequently the statements submitted are quite bulky and contain no short summary which will convey in a few figures all salient facts.

As an instance of a form which will convey the necessary information quickly and easily the following may be given, to be prepared for each class of product or group of products, as may be appropriate:

Sales, in quantity and value .....
Deduct—
Cost of sales, per unit or percentage and amount .....
Gross profit, per unit or percentage and amount .....
Less—
Selling and distribution expenses .....
Administrative expenses .....
Net profit, per cent. or per unit and amount .....

This statement would be supported by a subsidiary statement explanatory of cost of sales, viz.:

Stock of finished product at beginning of period, quantity and amount .....
Wages, per unit or percentage and amount .....
Materials per unit or percentage and amount .....
Overhead per unit or percentage and amount .....
Total .....
Less stock of finished products at end of period. .....
Cost of sales .....

An Analysis Under Suitable Headings

Also there would be an analysis of selling and administrative expenses under suitable headings. All these statements should show the figures for the period under review, the previous period, and the corresponding period of the previous year.

In addition to these statements, which in effect form a summarized profit-and-loss account, there would be purely statistical statements varying according to the nature of the business, and in deciding upon these an intimate knowledge of the business is required so as to determine which statistics will be of use in reducing costs and improving processes of manufacture. The accountant must put himself as far as possible in the place of the manager and show that he is not only competent to prepare the figures with a sufficient degree of accuracy and at a minimum expense, but that he knows how to apply the results so obtained to the practical side of the business. By such qualifications alone will he be able to sift his material into what is useful and what is superfluous, and so avoid the preparation of useless or immaterial statistics whose only merit lies in the mathematical accuracy of the calculations.

In this connection it may be opportune to register a protest against the common form of trading accounts and profit-and-loss accounts still too often prepared by accountants. It is high time that these were abandoned in favor of the form given above, which has been commonly in use in the United States for a quarter of a century but makes way slowly and with difficulty in this country. Shortly, the difference may be expressed as accounts prepared according to headings of service instead of by account names. There is no real reason why every account should not be prepared on the basis of service; yet frequently where the company or firm prepares its monthly or quarterly accounts in this form the accountants at the end of the period will revert to the old-fashioned debit and credit form of manufacturing and trading accounts, classified according to account names.

The further development of cost accounting depends to a large extent on the greater use of mechanical devices, so reducing the expense of obtaining figures which, without such assistance, would cost more than the savings that might be obtained thereby. A full consideration of these devices would require a complete paper and can not here be attempted. The main features consist of cards divided into fields, each of which represents one particular factor, qualities or values being represented by perforations in these fields. Sorting is done by means of needles passed through the perforations, either by hand or electrical contacts, and tabulation by means of other machines, worked either by hand or electricity. The efficiency of such methods depends largely on the volume of the original data with which it is desired to deal, and the greater the volume and the more continuously the machines are employed, the greater will be the economy. The problem of the efficient use of such methods is complicated by the human element, which sees in their adoption the displacement of human by machine labor, just as was the case in the middle of the last century when the introduction of special production machinery in the wool, cotton and other staple industries paved the way for the predominant industrial position which we still hold, in spite of our present, and it may still be hoped, temporary adversity. The answer is the same,

viz., that anything which tends to reduce expense will in the long run increase employment; but this is not much consolation to those immediately displaced, and unless they can be cared for continual opposition must be expected. Tolerence of the doctrine that the few must suffer for the benefit of the many or their posterity can hardly be expected of the few.

Public Aspects of the Question

In concluding this survey of cost accounts it is permissible to consider for a moment the public aspect of the question and its ultimate effect upon the relations between capital and labor, and between producer and consumer. These relations are at present very much under discussion, and if industry and all it means for the maintenance in reasonable comfort of a congested population is to survive it is clear that the era of suicidal strikes must be quickly banished and superseded by some more sensible methods of avoiding, if possible, but at any rate of settling, disputes. The impression is gaining ground that the present disastrous conditions are largely due to the intense secrecy which prevails as to the real costs or production and of the disposal of the resulting profits. If every producer and wholesale and retail dealer were to publish the salient features of his business none would be unduly prejudiced unless he were retaining an undue profit. The experience of those members of a trade who were doing well would be available for the use of others doing badly, and in fact the same comparison of costs would be available between different producers is now available within one organization as between its different factories. Such publicity would in the long run tend to reduce cost of production and distribution throughout the industry; to a fair division between wages and profits; and to a fair price to the consumer.

No Great Measure of Success

Up to the present competition has been relied upon to produce all these results, and yet it is fairly clear that no great measure of success has thus been reached. A beginning of new methods, however efficient, has been made in the coal industry, and while the present results are somewhat disastrous it would seem from the report of the coal commission that the disaster is in fact to a great extent the result of many old-fashioned and inequitable methods which that commission has disclosed.

Seeds of Better Methods Shown

The seeds of better methods have been sown, and if all parties, forgetting their quarrels and the extreme and often absurd methods of socialism and bolshevism as well as of individualism, will work together to nurture the seeds into strong plants, the nation may redeem its position, and with its invaluable natural resources and energy regain its former prosperity with a fairer division, among all classes, of the accruing wealth. The foundation must be publicity, and publicity in a form and sense that is at present but little understood, but essentially publicity in costs of production and distribution, with a fair price to the consumer and a fair division of the balance between labor and capital.

Service to the Community

For the solution of this problem it is essential that service to the community should play a much larger part in industry, and at least an equal part with individual profit. The present idea that a business belongs only to those who own the capital therein must give place to a new spirit that it belongs to all who contribute to its success, whether as capitalists or as brain or manual workers, and is a trust for the benefit of the consumer and the nation. This is a high ideal which may never be reached, but it can remain an ideal towards which continued progress may be made, and while one of the keys to it is a better understanding, with goodwill and cooperation between capital and labor, another is held by the accountant, whose province is to devise and propagate methods by which all the essential facts in industry may gradually become the property of the community.

To Increase Pulp Shipments Through Albany

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., July 25, 1927—Next year when greater warehouse facilities are available, will see an enormous increase in the amount of pulp and paper products handled through this port. It is declared by those interested in the development of the port facilities that pulp and paper shipments will eventually be among the leading products distributed through the new port. Plans have already been prepared by the Port Commission for specially constructed buildings for the storage of wood pulp, these plans being prepared after a series of conferences with pulp and paper manufacturers of this district and importers of wood pulp.

Donald G. Kibbey, traffic manager of the A. P. W. Paper Company, one of the original advocates of the Deeper Hudson, is authority for the statement that certain wood pulp importers would have started their distribution from Albany this season except for the fact that there are no logical warehousing facilities available. Mr. Kibbey during the past year or more has interviewed large importers and exporters and finds that they are watching the development and the progress of the Albany port with decided interest. Some of the largest wood pulp importers have declared their intention of making Albany a distributing point as soon as storage facilities are provided. It is stated that steamers bringing pulp cargoes to the United States will bring them to Albany at the same rates as to New York City, Philadelphia, Baltimore and other ports.

The first shipment of wood pulp to be brought to Albany by an ocean steamer was unloaded here two years ago under Mr. Kibbey's direction, the shipment coming from Sheet Harbor, Nova Scotia. Since then the A. P. W. Paper Company haas been receiving and distributing through the North Albany warehouses regular weekly shipments of wood pulp from the Sheet Harbor plant. Under the present arrangements it is necessary to transfer part of the cargo at New York City. When the deeper channed is completed by the government ocean steamers will be permitted to bring their full cargoes to Albany.

Petition for Berkshire Hills Paper Co. Receiver

PITTSFIELD, Mass., July 26, 1927.—Judge Christopher T. Callahan at the sitting of the Superior Court of Berkshire County last Thursday continued the petition for the appointment of Attorney Henry L. Harrington as permanent receiver for the Berkshire Hills Paper Company until August 15 for a hearing in Boston. Much opposition was filed against the making of the receivership permanent. Attorney Harrington told the court that the company has not sufficient quick assets to continue operations; but later modified it by saying that more capital was in sight for the industry. He said that there was a first mortgage of $504,000 and that the other debts totalled $375,000. Mr. Harrington and his family control the capital stock which consists of $400,000 common and $165,000 perferred. The property is estimated to be worth $1,125,000. He announced that a survey of the property is now being made by Ellery Baker & Co., auditors, and that this will be ready Aug. 1.

Attorney George F. Kelly of Holyoke, representing creditors, said that he objected to the continuance of Attorney Harrington as receiver.

Judge Fred R. Shaw of Adams, representing the town of Adams to which the company owes taxes also opposed the continuance of Mr. Harrington as receiver.

Rhinelander Paper Co. Using Spruce

RHINELANDER, Wis., July 18, 1927.—The Rhinelander Paper Company has 10,000 cords of spruce in its yards at the present time. Spruce has taken the place of hemlock in the manufacture of most of its products. With the exception of some grades of wrapping, all bleached glassine is now made from Canadian and Minnesota spruce.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Chillicothe, Ohio—The Chillicothe Paper Company will break ground at once for the construction of a proposed new addition to its mill for considerable increase in output. It will be two-story, 42x540 feet, with L-extension, 81 ft. wide. The expansion is reported to cost more than $150,000, with equipment. Hector R. McVicker is president.

Chicago, Ill.—The Chicago Coated Board Division of the Robert Gair Company, 420 East North Water street, will proceed at once with a proposed new two-story addition, to be used as an extension to the machine department. It is reported to cost more than $100,000, with equipment. A general building contract has been let to H. F. Friedstedt Company, 431 North Michigan avenue.

Bastrop, La.—The Republic Paper Products Company, 1402 West Marshall street, Richmond, Va., has perfected plans for the immediate construction of a new plant at Bastrop, for the production of paper bags and containers. The main unit will be 100x400 ft., brick and steel type, and will adjoin the local mill of the Southern International Paper Company. It is reported to cost more than $200,000, with equipment, and is scheduled for production at earliest possible date. R. J. Cullen, president of the Southern International Paper Company, will supervise the construction of the new Republic mill, and is understood to be interested in that project.

Westbrook, Me.—S. D. Warren Company, 101 Milk street, Boston, Mass., has work in progress on an expansion program at its local plant and proposes to complete the work near the close of the present year. A new building, two-story, 140x550 ft., is under way, to be equipped as a coating and finishing mill; arrangement is being made for the installation of a number of new coating machines, and accessory equipment. Work will also proceed on a new two-story structure, 150x200 ft., to be used for warehouse and distributing service. The present machine department is scheduled for considerable enlargement, to provide sufficient floor area to double the present output; it is understood that arrangements for the additional equipment will be consummated at an early date. Work has been carried out on a new electrical plant at the mill to provide required power for the expansion program.

Stockton, Cal.—The National Paper Products Company, Church street, has awarded a general contract to Barrett & Hilp, 918 Harrison street, San Francisco, Cal., for the construction of its proposed new addition to consist of two one-story units, instead of one such structure, as previously announced. The buildings will be 80x250 feet, and 60x100 feet, respectively, reinforced-concrete, and are estimated to cost about $160,000, with equipment. V. D. Simons, 435 North Michigan avenue, Chicago, Ill., is consulting engineer.

Kelso, Wash.—The Kelso Paper Company is reported to be perfecting plans for the early construction of a new mill at North Kelso, where a site has been selected on the Cowlitz River. The initial unit will be equipped for an output of about 30 tons of finished stock per day, and is reported to cost close to $500,000, with machinery.

Port Edwards, Wis.—The Nekoosa-Edwards Paper Company is carrying out work on a new addition by day labor, and proposes to have the structure ready for service in the near future. It will be one-story, brick, 165x200 feet, to be equipped as a finishing department, and is estimated to cost close to $150,000, with machinery. Miscellaneous contracts are being let.

Stevens Point, Wis.—The Whiting-Plover Paper Company has completed plans for the construction of a new one-story building at its mill, and will begin work at an early date. The estimated cost has not been announced. The structure will be used largely for warehouse and distributing service.

Philadelphia, Pa.—The Paper Manufacturers' Company, Inc., Fifth and Willow streets, has added to its realty purchase on Callowhill street, following recent acquisition of a site 85x87 feet, adjoining its plant at 501-7 Callowhill street. The new holdings include a site at the northwest corner of Fifth and Callowhill streets, and then continuing on last noted thoroughfare. The entire plot will be used for the construction of a new building, for which plans will be arranged at an early date.

Port Townsend, Wash.—The Zellerbach Paper Corporation, San Francisco and Sacramento, Cal., is said to have plans maturing for the construction of a new mill at this place, and will begin work as soon as title is taken to selected site. The plant will be used for the production of kraft papers, and will be constructed in two units. The first is to be equipped for a capacity of about 150 tons per day, and is scheduled for completion in the spring of next year; the second unit will be started immediately thereafter, and will be of close to like rating. The entire project is reported to cost close to $800,000, with equipment.

Scotia, Cal.—The Pacific Lumber Company, Scotia, Cal., has made application to the State Department of Public Works, Division of Water Rights, for permission to divert water from the Eel River in Humboldt County, the output to be used in connection with a proposed new pulp and paper mill to be located at that point. Preliminary plans for the mill are said to be in progress, with work to begin at an early date.

Hodge, La.—The Advance Bag and Paper Company, Middletown, Ohio, is proceeding with the construction of its proposed new local mill, to be operated in the name of the Southern Advance Bag & Paper Company, with plant to be devoted to the production of kraft pulp, kraft papers, as well as finished bags and containers. The initial plant will have a capacity of about 100 tons of kraft pulp per day. In connection with the enterprise the company has awarded a contract to the Jordan Drilling Company, Monroe, La., for the construction of a pipe line from Monroe to Hodge, a distance of about 45 miles, estimated to cost more than $4,000,000, and work on this line will proceed immediately. Frank Rice, stationed at Hodge, is purchasing agent.

Harvard, Ill.—The Lanning Bag & Specialty Company has had preliminary plans drawn for the construction of a new one-story plant on East Front street, reported to cost close to $20,000. No announcement has been made as regards when work

(Continued on page 70)

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NEW YORK IMPORTS

WEEK ENDING JULY 23, 1927

SUMMARY

Cigarette paper .....240 cs.
Wall paper .....33 bls., 3 pkgs., 1 cs.
Paper hangings .....4 bls., 41 cs.
News print .....5,582 rolls
Printing paper .....244 cs.
Parchment paper .....23 bls., 1 cs.
Wrapping paper .....230 bls., 24 cs.
Packing paper .....68 cs.
Basic paper .....105 cs.
Metal paper .....72 cs.
Drawing paper .....5 cs.
Filter paper .....95 bls., 115 cs.
Surface coated paper .....160 cs.
Baryta coated paper .....130 cs.
Gold coated paper .....7 cs.
Writing paper .....34 cs.
Bowl paper .....36 bls.
Decalcomania paper .....37 cs.
Tissue paper .....5 cs.
Cover paper .....1 ble., 4 cs.
Straw board .....344 rolls
Miscellaneous paper.....2 rolls, 13 bls., 186 cs.

CIGARETTE PAPER

Standard Products Corp., Waukegan, Havre, 80 cs.
Standard Products Corp., Indep. Hall, Havre, 160 cs.

WALL PAPER

W. H. S. Lloyd & Co., Samaria, Liverpool, 5 bls.
F. J. Emmerich, Samaria, Liverpool, 3 pkgs.
F. J. Emmerich & Co., Cleveland, Hamburg, 3 bls., 1 cs.
S. Stern, Stiner Co., Inc., Cleveland, Hamburg, 3 bls.
Globe Shipping Co., Cleveland, Hamburg, 22 bls.

PAPER HANGINGS

Whiting & Patterson Co., Inc., Minnekahda, London, 31 cs.
Whiting & Patterson Co., Inc., Mauretania, Southampton, 10 cs.
G. J. Hunken & Co., Cleveland, Hamburg, 4 bls.

NEWS PRINT

Brooklyn Times, Corner Brook, Corner Brook, 912 rolls.
Brooklyn News, Corner Brook, Corner Brook, 833 rolls.
N. Y. Telegram, Corner Brook, Corner Brook, 3,200 rolls.
N. Y. Times, Corner Brook, Corner Brook, 28 rolls.
Clinton Paper Co., Corner Brook, Corner Brook, 524 rolls.
Bank of Montreal, Corner Brook, Corner Brook, 85 rolls.

PRINTING PAPER

E. Dietzgen & Co., Cleveland, Hamburg, 11 cs.
Heemsoth, Basse & Co., Cleveland, Hamburg, 33 cs.
Perkins, Goodwin & Co., Cleveland, Hamburg, 49 cs.
P. C. Zuhlke, Samland, Antwerp, 72 cs.
Martin & Bechtold, Pr. Roosevelt, Bremen, 12 cs.
E. Dietzgen & Co., N. Amsterdam, Rotterdam, 67 cs.

PARCHMENT PAPER

Walker, Goulard & Plehn Co., Cleveland, Hamburg, 23 bls., 1 cs.

WRAPPING PAPER

J. P. Heffernan Paper Co., Liberty Land, Genoa, 50 bls.
Birn & Wachenheim, Samland, Antwerp, 24 cs.
National City Bank, Samland, Antwerp, 180 bls.

PACKING PAPER

Old Master Paper & Pulp Corp., Cleveland, Hamburg, 68 cs.

BASIC PAPER

American Express Co., Samland, Antwerp, 105 cs.

COLORED PAPER

Levi Sondheimer, Mauretania, Southampton, 1 cs.

METALIZED PAPER

Standard Underground Cable Co., N. Amsterdam, Rotterdam, 5 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Carmania, Liverpool, 5 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Carmania, Liverpool, 7 cs.
J. Manheimer, Homeric, Southampton, 85 bls.
E. Fougera & Co., Homeric, Southampton, 103 cs.
H. Reeve Angel & Co., Inc., Homeric, Southampton, 10 bls., 4 cs.
C. Schleicher Schull Co., Cleveland, Hamburg, 1 cs.

FILTER PULP

Mager Bros., Cleveland, Hamburg, 13 cs.

FILTER MASS

A. Gusmer, Inc., Pr. Roosevelt, Bremen, 60 bls.

METAL PAPER

Tamm & Co., Cleveland, Hamburg, 6 cs.
Hensel, Bruckman & Lorbacher, Pr. Roosevelt, Bremen, 61 cs.

SURFACE COATED PAPER

Globe Shipping Co., Cleveland, Hamburg, 69 cs.
P. C. Zuhlke, Samland, Antwerp, 91 cs.

BARYTA COATED PAPER

Globe Shipping Co., Pr. Roosevelt, Bremen, 130 cs.

GOLD COATED PAPER

F. Murray Hill, Pr. Roosevelt, Bremen, 7 cs.

WRITING PAPER

W. J. Byrnes, Waukegan, Havre, 4 cs.
W. J. Byrnes, Indep. Hall, Havre, 2 cs.
Abraham & Strauss, Inc., Indep. Hall, Havre, 1 cs.
Stern Bros., Indep. Hall, Havre, 8 cs.
J. E. Bernard & Co., Homeric, Southampton, 9 cs.
Guibout Freres, Homeric, Southampton, 10 cs.

BOWL PAPER

C. A. Johnson & Co., Samaria, Liverpool, 36 bls.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Samaria, Liverpool, 18 cs. (duplex).
B. F. Drakenfeld & Co., Samaria, Liverpool, 13 cs. (simplex).
L. A. Consmiller, Pr. Roosevelt, Bremen, 5 cs.
C. W. Sellers, Pr. Roosevelt, Bremen, 1 cs.

TISSUE PAPER

F. B. Vandegrift & Co., Samaria, Liverpool, 3 cs.
A. W. Fenton, Inc., Cleveland, Hamburg, 2 cs.

NOTE PAPER

Van Oppen & Co., Homeric, Southampton, 1 cs.

SILK PAPER

M. Goldizer, Inc., Homeric, Southampton, 1 cs.

COVER PAPER

International Forwarding Co., Cleveland, Hamburg, 4 cs., 1 ble.

STRAW BOARD

Haas Bros., N. Amsterdam, Rotterdam, 344 rolls.

MISCELLANEOUS PAPER

Gallagher & Ascher, Minnekahda, London, 3 cs.
F. C. Strype, Homeric, Southampton, 4 cs.
J. Wanamaker, Homeric, Southampton, 2 cs.
Heemsoth, Basse & Co., Cleveland, Hamburg, 2 cs.
Keller Dorian Paper Co., Cleveland, Hamburg, 2 bls.
D. S. Walton & Co., Cleveland, Hamburg, 2 rolls, 11 bls.
Globe Shipping Co., Cleveland, Hamburg, 64 cs.
Japan Paper Co., Roma, Genoa, 72 cs.
Tamm & Co., N. Amsterdam, Rotterdam, 3 cs.
Keuffel & Esser Co., N. Amsterdam, Rotterdam, 5 cs.
International Forwarding Co., N. Amsterdam, Rotterdam, 19 cs.
Japan Paper Co., N. Amsterdam, Rotterdam, 12 cs.

RAGS, BAGGINGS, ETC.

Castle & Overton, Inc., Waukegan, Havre, 220 bls. baggings.
Salomon Bros. & Co., Waukegan, Havre, 14 bls. rags.
A. W. Fenton, Inc., Waukegan, Havre, 39 bls. rags.
E. Mayer, Waukegan, Havre, 15 bls. rags.
W. Steck & Co., Waukegan, Dunkirk, 102 bls. rags.
E. A. Stone, Waukegan, Dunkirk, 354 bls. rags.
Lombard Trading Co., Carmania, Liverpool, 34 bls. paper stock.
American Exchange Irving Trust Co., Bolivier, Antwerp, 41 bls. rags.
B. D. Kaplan, Bolivier, Antwerp, 3 bls. rags.
American Express Co., Baltic, Liverpool, 197 bls. rags.
American Exchange Irving Trust Co., Minnekahda, London, 179 bls. jute waste.
Downings Express, Samaria, Liverpool, 16 bls. rags.
B. D. Kaplan, Samaria, Liverpool, 3 bls. rags.
N. E. Berzen, Naples Maru, Hamburg, 2 bls. rags.
Gallagher & Ascher, Naples Maru, Hamburg, 15 bls. rags.
Railway Supply & Manfg. Co., Ontario, Havre, 20 bls. thread waste.
Royal Manfg. Co., Ontario, Havre, 77 bls. thread waste.
Castle & Overton, Inc., Ontario, Havre, 63 bls. bagging.
Chase National Bank, Ontario, Havre, 74 bls. string waste.
Equitable Trust Co., Ontario, Havre, 15 bls. rags.
Bulkley, Dunton & Co., Ontario, ——, 36 bls. bagging.
Bulkley, Dunton & Co., Eastern Dawn, ——, 37 bls. rags.
E. J. Keller Co., Inc., Eastern Dawn, Antwerp, 45 bls. linen threads.
Castle & Overton, Inc., Eastern Dawn, Antwerp, 53 bls. thread waste.
A. Resnati, Sangamon, Genoa, 50 bls. rags.
A. W. Fenton, Inc., Sangamon, Genoa, 21 bls. rags.
American Over-Ocean Corp., Atago Maru, Kobe, 50 bls. rags.
2nd National Bank, Atago Maru, Kobe, 70 bls. rags.
E. Mayer, Cleveland, Hamburg, 119 bls. rags.
Manufacturers Trust Co., Samland, Antwerp, 63 bls. flax canvas.
National City Bank, Pr. Roosevelt, Bremen, 22 bls. rags.
A. H. Searle, Pr. Roosevelt, Bremen, 9 bls. rags.
V. Galaup, Indep. Hall, Dunkirk, 183 bls. rags.
V. Galaup, Indep. Hall, Havre, 193 bls. rags.
Salomon Bros. & Co., Indep. Hall, Havre, 20 bls. rags.
American Trading Co., Indep. Hall, Havre 2 bls. rags.
S. Birkenstein & Sons, Indep. Hall, Havre, 126 bls. bagging.
E. J. Keller Co., Inc., Indep. Hall, Havre, 80 bls. bagging.
Bulkley, Dunton & Co., N. Amsterdam, ——, 22 bls. waste.
Bulkley, Dunton & Co., N. Amsterdam, ——, 47 bls. bagging.
R. Canovai & Son, Kari Skogland, Marseilles, 35 bls. rags.
Union National Bank, Kari Skogland, Barcelona, 152 bls. rags.

OLD ROPE

American Exchange Irving Trust Co., Minnekahda, London, 27 coils.
American Exchange Irving Trust Co., Ontario, Havre, 127 pkgs.
E. J. Keller Co., Inc., Ontario, Dunkirk, 74 bls.
Brown Bros. & Co., Cleveland, Hamburg, 34 bls.
Brown Bros. & Co., N. Amsterdam, Rotterdam, 173 bls.

CASEIN

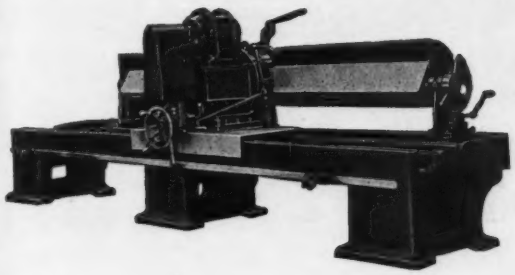
National City Bank, Naples Maru, Hamburg, 254 bags, 21,498 ks.
National City Bank, Munargo, Buenos Aires, 1,084 bags.
Atterbury Bros., Inc., Munargo, Buenos Aires, 1,668 bags.
Kalbfleisch Corp., Munargo, Buenos Aires, 1,265 bags.
Innes, Speiden & Co., Indep. Hall, Havre, 250 bags, 25,033 ks.

WOOD PULP

J. Anderson & Co., Naples Maru, Hamburg, 525 bls. sulphite, 105 tons.
Perkins, Goodwin & Co., Bird City, Umea, 1,400 bls. sulphate, 203 tons.
Castle & Overton, Inc., Bird City, Memel, 2,375 bls. wood pulp, 357 tons.
Bulkley, Dunton & Co., Bird City, ——, 4,525 bls. wood pulp, 931 tons.
Bulkley, Dunton & Co., Copenhagen, ——, 1,950 bls. wood pulp, 390 tons.
J. Anderson & Co., Copenhagen, Stugsund, 4,500 bls. sulphite, 900 tons.
M. Gottesman & Co., Inc., Copenhagen, Stockholm, 1,000 bls. sulphate, 200 tons.
Chemical National Bank, Copenhagen, Iggesund, 1,500 bls. sulphate, 300 tons.
J. Anderson & Co., Copenhagen, Hernosand, 3,000 bls. sulphate, 600 tons.
J. Anderson & Co., Copenhagen, Hernosand, 3,000 bls. sulphite, 500 tons.
Scandinavian Pulp Agency, Inc., Innaren, Skutskar, 900 bls. dry pulp.
Scandinavian Pulp Agency, Inc., Innaren, Sundsvall, 1,000 bls. sulphite.
Scandinavian Pulp Agency, Inc., Innaren, Sundsvall, 1,250 bls. sulphate.
Johanson, Wales & Sparre, Inc., Innaren, Sundsvall, 2,575 bls. sulphite.
J. Anderson & Co., Innaren, Sundsvall, 2,700 bls. sulphate.

(Continued on page 66)

Edge, Face and Surface Grinding



The constantly increasing use of the new traveling grinding wheel machines for paper knife grinding makes our new Mammoth Grinder now almost a universal favorite for this service.

The view here given shows the machine equipped with magnetic chuck for knives, shear blades and surface grinding. This favorite machine of recent years is now better than ever before.

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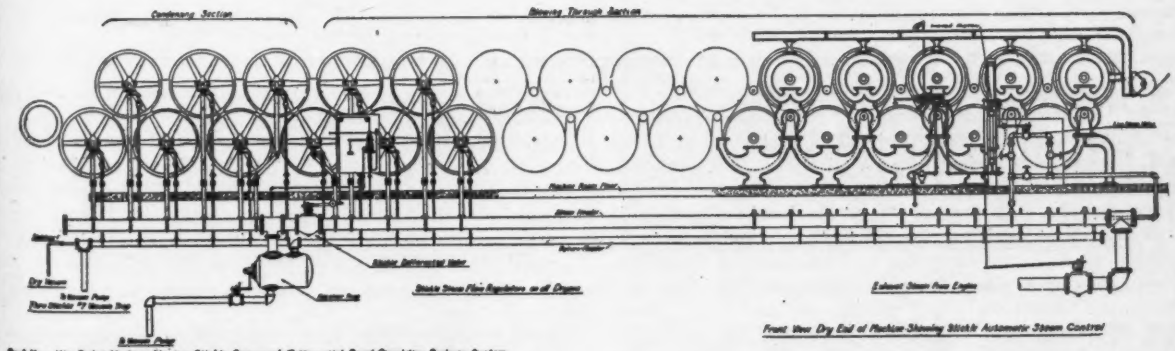
STICKLE'S SYSTEM OF DRYING PAPER



Back View Wet End of Machine Showing Stickle Compound Differential Rapid Circulating Drainage System

Front View Dry End of Machine Showing Stickle Automatic Steam Control

The Stickle Automatic Steam Control and Differential Rapid Circulating Drainage System will automatically maintain an evenly dried sheet at the lowest possible pressure at which a sheet of paper can be dried. The sheet will be held close to a one-half of one per cent moisture change.

Ask for Bulletin No. 18

STICKLE STEAM SPECIALTIES CO.
New York INDIANAPOLIS, IND. Boston

Imports of Paper and Paper Stock

(*Continued from page 64*)

Bulkley, Dunton & Co., N. Amsterdam, ——, 800 bls. wood pulp.
M. Gottesman & Co., Inc., Milos, Stockholm, 500 bls. wood pulp.

WOOD FLOUR

A. Kramer & Co., Veendam, Rotterdam, 300 bags.
A. Kramer & Co., N. Amsterdam, Rotterdam, 200 bags.

BOSTON IMPORTS

WEEK ENDING JULY 23, 1927

Brown Bros. & Co., Idaho, Hull, 188 coils old rope.
Perkins, Goodwin & Co., Bird City, Umea, 3,500 bls. sulphate, 508 tons.
Scandinavian Pulp Agency, Inc., Bird City, Gothenburg, 5,080 bls. kraft pulp, 1,016 tons.
Scandinavian Pulp Agency, Inc., Bird City, Gothenburg, 2,286 bls. sulphite, 456 tons.
Castle & Overton, Inc., Bird City, Memel, 2,981 bls. wood pulp, 447 tons.
J. Anderson & Co., Copenhagen, Stugsund, 500 bls. sulphite, 100 tons.
J. Anderson & Co., Copenhagen, Hernosand, 300 bls. sulphite, 50 tons.
J. Anderson & Co., Copenhagen, Hernosand, 810 bls. sulphate, 160 tons.
American Exchange Irving Trust Co., Copenhagen, Hernosand, 750 bls. sulphate, 125 tons.
Bulkley, Dunton & Co., Copenhagen, ——, 3,550 bls. wood pulp, 650 tons.
Buck, Kiaer & Co., Inc., Ivar, Oslo, 1,000 bls. sulphite.
Castle & Overton, Inc., Naperian, England, 93 bls. waste paper.
Castle & Overton, Inc., Lorain, Hamburg, 1,277 bls. wood pulp.
E. J. Keller Co., Inc., Lorain, Hamburg, 115 bls. rag pulp.

PORTLAND IMPORTS

WEEK ENDING JULY 23, 1927

Pagel, Horton & Co., Inc., Innaren, Skutskar, 4,000 bls. dry pulp.
Scandinavian Pulp Agency, Inc., Innaren, Skutskar, 200 bls. dry pulp.
M. Gottesman & Co., Inc., Innaren, Sundsvall, 3,000 bls. sulphite.
Johanson, Wales & Sparre, Inc., Innaren, Sundsvall, 2,500 bls. sulphite.

NORFOLK IMPORTS

WEEK ENDING JULY 23, 1927

E. Butterworth & Co., Inc., Eastern Dawn, Antwerp, 233 bls. bagging.
Dixie Jute Bagging Corp., Eastern Dawn, Antwerp, 53 bls. bagging.

PHILADELPHIA IMPORTS

WEEK ENDING JULY 23, 1927

Strawbridge & Clothier Co., Waukegan, Havre, 1 cs. tissue paper.
Atlas Waste Manfg. Co., Waukegan, Dunkirk, 234 bls. rags.
E. Butterworth & Co., Inc., Waukegan, Dunkirk, 94 bls. rags.
Castle & Overton, Inc., Waukegan, Dunkirk, 686 bls. rags.
E. A. Stone & Co., Waukegan, Dunkirk, 324 bls. rags.
W. Schall & Co., Liberty Land, Marseilles, 48 bls. rags.
Pagel, Horton & Co., Inc., Bird City, Umea, 1,200 bls. sulphite, 203 tons.
Scandinavian Pulp Agency, Inc., Bird City, Gothenburg, 127 bls. kraft pulp, 25 tons.
Phila. Girard National Bank, Ontario, Dunkirk, 52 bls. rags.
Chase National Bank, Ontario, Dunkirk, 26 bls. rags.
National Bank of Commerce, Ontario, Havre, 21 bls. new cuttings.
National Bank of Commerce, Ontario, Havre, 157 bls. rags.
Chase National Bank, Ontario, Havre, 119 bls. rags.
State Bank, Ontario, Havre, 18 bls. rags.
N. Y. Trust Co., Ontario, Havre, 33 bls. rags.
S. Birkenstein & Sons, Sangamon, Genoa, 213 coils rope.
Scandinavian Pulp Agency, Inc., Innaren, Skutskar, 440 bls. dry pulp.
Scandinavian Pulp Agency, Inc., Innaren, Sundsvall, 500 bls. sulphite.
Johanson, Wales & Sparre, Inc., Innaren, Sundsvall, 1,600 bls. sulphite.
Johanson, Wales & Sparre, Inc., Innaren, Sundsvall, 420 bls. wet pulp.
E. M. Sergeant & Co., Innaren, Sundsvall, 600 bls. sulphite.
Price & Pierce, Ltd., Innaren, Sundsvall, 600 bls. sulphite.
M. Gottesman & Co., Inc., Innaren, Sundsvall, 500 bls. sulphite.
J. Anderson & Co., Innaren, Sundsvall, 1,375 bls. sulphate.
Castle & Overton, Inc., City of Bedford, India, 65 bls. bagging.
Castle & Overton, Inc., Exeter City, England, 130 bls. rags.
Castle & Overton, Inc., Kari Skogland, Spain, 50 bls. rags.
Castle & Overton, Inc., West Harcuvar, Denmark, 85 bls. rags.

NEW ORLEANS IMPORTS

WEEK ENDING JULY 23, 1927

Castle & Overton, Inc., Africa Maru, Japan, 300 bls. rags.
Castle & Overton, Inc., Africa Maru, Japan, 300 bls. bagging.
E. J. Keller Co., Inc., J. Luckenbach, ——, 50 bls. rags.
E. J. Keller Co., Inc., J. Luckenbach, ——, 250 bls. bagging.

BALTIMORE IMPORTS

WEEK ENDING JULY 23, 1927

Robert Blank, Liberty Land, Naples, 132 bls. rags.
National City Bank, Ontario, Dunkirk, 652 bls. rags.
National City Bank, Ontario, Havre, 1,012 bls. rags.
National City Bank, Ontario, Havre, 20 bls. bagging.
Congoleum Nairn Co., Eastern Dawn, Antwerp, 405 bls. rags.
Congoleum Nairn Co., Eastern Dawn, Antwerp, 6 bls. bagging.
Certainteed Products Corp., Eastern Dawn, Antwerp, 370 bls. rags.
Congoleum Nairn Co., Sangamon, Marseilles, 216 bls. rags.
Congoleum Nairn Co., Indep. Hall, Dunkirk, 485 bls. rags.
Congoleum Nairn Co., Indep. Hall, Havre, 30 bls. bagging.
Leshner Paperstock Co., Indep. Hall, Havre, 37 bls. bagging.
Castle & Overton, Inc., Anaconda, Rotterdam, 720 bls. wood pulp, 112 tons.
Bulkley, Dunton & Co., Anaconda, ——, 974 bls. wood pulp, 203 tons.
Bulkley, Dunton & Co., Anaconda, ——, 79 bls. old rope.
M. Gottesman & Co., Inc., Yokohama, Stockholm, 5,750 bls. wood pulp.

Windsor Locks Mills Incorporate

Arthur D. Little, Inc., announce the incorporation of Windsor Locks Mills, Inc., which has leased the mills at Windsor Locks, Conn., formerly operated by the Windsor Locks Paper Mills Company.

Harvy E. Platt, treasurer of J. L. N. Smythe Company of Philadelphia is president of the new company, and C. E. Carpenter and E. R. Adams of Arthur D. Little, Inc., of Cambridge, will serve as vice president and treasurer, respectively. Directors include these officers and Laird H. Simons and T. H. Butler Smythe.

After addition of new equipment and improvements now under way the mills are expected to be put in operation in August, producing high grade waxing, manifold and other specialties. Daily production will be between ten and fifteen tons.

C. W. Lyman Estate Appraised at $379,330

An appraisal filed last week of the estate of Chester W. Lyman, former vice president of the International Paper Company, shows that although he had property valued at $379,330 he gave only an income of $2,310 to his daughter, Louise Marguerite Lyman, who will also receive $20,000 additional after the death of her mother, Mrs. Marguerite B. C. Lyman. Mrs. Lyman obtained a divorce in Reno in 1920, and under a settlement out of court, Mrs. Lyman agreed to pay her $2,440 a year alimony, and $2,310 to her daughter. The will merely continues these allowances with the addition of the $20,000 bequest to the daughter.

Mr. Lyman gave $25,000 to the Hopkins Grammar School at New Haven and $50,000 to the Sheffield Scientific School to be used to teach hydraulic engineering and allied subjects. Yale University received $3,000 for a marble bust of his father, Chester Smith Lyman, while the Russell Trust Association of New Haven received $6,000, of which $1,000 is to be used to purchase a portrait of his father, for many years a professor in the Sheffield Scientific School.

The largest item in his estate was 1,400 shares of International Paper stock worth $129,500.

Rushing Work on Longview Fibre Plant

PORTLAND, Ore., July 22, 1927.—Again the construction crew on the Longview Fibre Company's plant at Longview, Wash., has been increased until now 340 men are employed. Starting with a little over 200 the workmen have been steadily added in order that the operation may be speeded.

The steamer Pacific brought 20 car loads of machinery during the past week. This is the third steamer load to land with equipment from the east and two more are scheduled in July.

The shell of the big concrete and steel building is practically complete. One permanent crane is in operation, being used for placing machinery.

Cotton and Paper Rolls
Super Calenders
Friction Calenders
Embossing Calenders
Hydraulic Presses and Pumps

Successors to the Granger Foundry & Machine Co.

The Textile-Finishing Machinery Company
PROVIDENCE, R. I.

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HIGHEST QUALITY
SPECIALLY MADE FOR THE PAPER TRADE
PRICES ON APPLICATION

BEMIS ASSOCIATES INC.
WATERTOWN, MASS.

Take a look inside this Jenkins Gate

Sectional View
Fig. 370, screwed, Jenkins Standard Bronze Gate Valve.

A close examination of this sectional view of a Jenkins Gate Valve shows you details of its design and construction which count heavily in determining a valve's performance.

Note, for example, the double faced wedge which is tested on both sides before the valve leaves the Jenkins factory. Note the guide cast in the body. This holds the wedge in line, prevents chattering, and insures perfect seating.

Note, too, the even and ample distribution of metal throughout the valve.

Jenkins Gate Valves are furnished in bronze and iron, in standard, medium and extra heavy patterns.

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Montreal, Canada *London, England*

Always marked with the "Diamond"
Jenkins Valves
SINCE 1864

TYPE "B" IRON EXTRACTOR

It consists of special magnetic surfaces of great power over which the paper stuff is made to pass. As a result, all the iron and many other foreign substances are completely extracted. Hundreds of these devices are in use daily and no one of them has failed to give complete satisfaction. Write us for Bulletins and full data.

for **PAPER MAKING**

THE ROLAND T. OAKES CO., Holyoke, Mass.
Electrical Specialists. *Established 1885*

New York Market Review

Office of THE PAPER TRADE JOURNAL,
Wednesday, July 27, 1927.

Conditions in the local paper market are fairly satisfactory for the season of the year. Demand for the various grades of paper is moderately active, and many close observers are looking forward with confidence to the autumn campaign. Quotations in practically all divisions of the industry are holding well up to schedule, and there is little talk of concessions around.

Consumption of news print is being maintained by the publishers along excellent lines, and the increased output produced this year is being absorbed readily. Despite the usual summer relaxation, the advertising and circulation of the leading newspapers shows little falling off. Spot offerings of news print are amply sufficient to take care of immediate requirements.

While the paper board market is somewhat quieter, prices generally rule steady, and the outlook for expansion in the Fall is promising. Fine papers are in routine request. The tissue market is practically unchanged. The undertone of the coarse paper market is sound, and a big business is being done with summer specialties. Wrapping paper continues to move in good volume.

Mechanical Pulp

Both domestic and imported ground wood are in moderate request. Production of mechanical pulp is being maintained at a satisfactory rate and offerings are generous. Contract shipments are moving into consumption in a routine manner. Prices remain unchanged from the levels registered in the preceding week.

Chemical Pulp

Demand for chemical pulp is mostly along routine lines. However, both foreign and domestic producers are well sold ahead on contract and most of the activity experienced at present is in the spot market. Although customers are having little difficulty in filling their current requirements, quotations remain unchanged, and prices are expected to recover in the near future, when trading becomes more lively.

Old Rope and Bagging

No important changs have been recorded in the old rope and bagging markets of late. The demand for both imported and domestic old rope is fairly steady and prices are unaltered. Bagging is reported to be only in moderate request. This condition, however, is only seasonal and a more active market is confidently looked for in the near future.

Rags

A better feeling appears to be developing in the rag industry but many of the mills are expected to be in the market shortly to replenish their stocks, as it is reported that supplies on hand are low. Roofing rags are imperceptibly easier. Cloth strippings are quoted at from 1.60 to 1.70, and No. 1 roofing rags at the same level. Dark cottons are selling at from 1.50 to 1.60.

Waste Paper

Quietness continues to reign in the paper stock market. In some quarters, the view is expressed that a more active market is due at any time, and there are some signs of an awakening of interest on the part of the paper mills. Old kraft machine compressed bales are now offered at from 1.90 to 2.00 and strictly over-issue news is quoted at from .60 to .70.

Twine

Steadiness continues to prevail in the twine market, and no radical changes have been reported for some time. Most of the business transacted during the past week was along routine lines. A general expansion of the industry after Labor Day is predicted by many competent authorities. Prices remain unaltered from previously recorded levels.

International Increases Power Holdings

Through the purchase of 20,000 common shares in the New England Power Association, the International Paper Company has become the largest single stockholder and has gained working control of the association.

Acquisition of this block, which was purchased from the Hartford Electric Light Company, brings the holdings of International Paper to 340,000 common shares. On March 31 there were 784,851 no par common shares outstanding. So far as has been made known, the International Paper Company has not yet formulated plans for the financing of its recent stock acquisitions which, in the last few months, amount to between 50,000 and 65,000 shares.

The interest of the International Paper Company in the association originated early in 1926 with the subscription to 86,667 shares of no par common at 50 a share. By the end of the year, this was increased to 116,970 shares.

Recent offering of $15,000,000 in 7 per cent preferred stock by the paper company was in part to pay for the purchase of 160,500 shares of the association's common, for which the equivalent of about $60 a share was paid. Subsequent purchases, the most recent of which have been from the Boston Edison Company and the Hartford Electric Light Company, have brought the Paper Company's holdings to their present total of about 340,000.

International Paper already holds large power interests, and their acquisition of control of the New England Power Association is understood to be part of a policy to control the companies from which they purchase their power.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 27, 1927.—The Government Printing Office will receive bids on August 1 for 40,000 pounds (150,000 sheets) of 38 by 48—269, white halftone book paper.

The Government Printing Office has received the following bids for 150,000 pounds of manila tag board in 26¼ inch rolls: Reese & Reese, 9.855 cents per pound; Barton, Duer & Koch Paper Company, 9.35 cents; Whitaker Paper Company, 9.36 cents; and Dobler & Mudge, 9 cents.

Rex Pulp Products Co. Formed

PORTLAND, Me., July 21, 1927.—Rex Pulp Products Company, organized at Portland, to engage in the business of pulp making and the manufacture of pulp wood products. The capital stock consists of 62,000 shares, of which 50,000 is common and 12,000 preferred of no par value. The officers and directors are: President, J. G. Ryan; treasurer, P. A. Elliott; and H. M. Menchen, E. W. Atwood, H. J. Connell, C. L. Hutchinson, L. A. Pierce, all of Portland.

West Virginia Pulp and Paper Company

Manufacturers of

SUPERCALENDERED and MACHINE FINISHED BOOK and LITHOGRAPHIC PAPERS

Offset, Envelope, Bond, Writing, Cover and Music Paper, High Grade Coated Book, Index Bristol, Post Card, Kraft and Label Papers.

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Bleached Spruce Sulphite and Soda, Kraft Pulp

200 Fifth Avenue New York — 732 Sherman Street Chicago

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Sixth and Chestnut Sts., Philadelphia, Pa.

A family mark

Specialization in silicates has earned us an experience in fixing the right standards for each grade and then in adhering to them in every shipment.

To make it easy to identify Quartz Quality Silicates of Soda, the accompanying trade mark has been adopted.

Our mark is an indication of origin. But we hope that it denotes also constancy of purpose to provide only silicates of uniform quality, together with a knowledge of what may be accomplished with them in the manufacture of various papers.

Phila. Quartz Co.
General Offices
Philadelphia
Six Plants & Stocks in 32 Cities

Sulphur

A FIRST REQUISITE

IN

Paper Making

Large Production
Ample Reserves
Prompt Deliveries
Purity 99½%

TEXAS GULF SULPHUR CO.
41 E. 42nd Street New York City
Mine Gulf, Matagorda County, Texas

1864 1927

"EXCELSIOR" FELTS

for every grade of

PULP AND PAPER

We continue to maintain at the top the quality of Excelsior Felts, as we have done since we, as pioneers, made the first endless paper machine felts manufactured in America.

Seamless felts for fast running.
Satin Style felts for finish.
Special felts to meet every condition.
Send us your felt problems.

SOLD BY

KNOX WOOLEN COMPANY
CAMDEN, MAINE

BULKLEY, DUNTON & COMPANY
75-77 Duane St., N. Y., and direct

Miscellaneous Markets

Office of THE PAPER TRADE JOURNAL,
Wednesday, July 27, 1927.

Trading in the local chemical market was fairly active during the past week. A moderate amount of spot business was transacted and prices were maintained at recent levels, in most instances. Contract shipments continue to move at an excellent pace and the general outlook for the future is very encouraging.

BLANC FIXE.—Steady conditions continue to prevail in the blanc fixe market and both the pulp and the powder are in good request. There has been no further change in prices. The pulp is still quoted at $60 per ton, in bulk, while the powder is selling at from 4 cents to 4½ cents a pound, in barrels, at works.

BLEACHING POWDER.—Consumption of bleaching powder is being maintained in steady volume. Contract withdrawals are moving at a normal pace for the time of the year. Prices remain unaltered. Bleaching powder is still quoted at from $2 to $2.40 per 100 pounds, in large drums, at works, according to quantity.

CASEIN.—The casein market was slightly easier during the past week. Stocks in hand are said to be larger than for some time. However, consumption of this product is likely to increase in the near future and the present condition of the industry is believed to be only temporary. Imported casein is now quoted at from 17½ cents to 18½ cents a pound. Domestic casein is selling at from 17 cents to 19 cents a pound, all in bags, car lot quantities.

CAUSTIC SODA.—While the production of caustic soda has been heavy of late, the demand is expanding and offerings are being readily absorbed. Prices generally remain unaltered. Caustic soda is quoted at from $3 to $3.10 per 100 pounds, in large drums, at works. Spot car lots are selling at from $3.20 to $3.25 per 100 pounds.

CHINA CLAY.—Both imported and domestic paper makers' clay is in fairly satisfactory request at present. Shipments against contract are going forward in good volume. Prices remain unchanged. Imported china clay is selling at from $15 to $25 a ton, ship side. Domestic paper makers' clay is quoted at from $8 to $9 a ton, at mine, and pulverized at from $10 to $12 a ton.

CHLORINE.—Demand for chlorine continues excellent and contract withdrawals are moving into consumption at a steady pace. Prices are holding up to the schedule which has been maintained for some considerable time. Chlorine is quoted at 4 cents a pound, in tanks, or multi-unit cars, at works, on contract orders. The spot quotation ranges from 4¼ cents to 4½ cents a pound.

ROSIN.—The trend of the rosin market has improved considerably and prices have again advanced. The demand for this product shows signs of expansion in the near future. At the naval stores, the grades of gum rosin used in the paper mills are now being offered at $10.35 per 280 pounds, in barrels, ship side. Wood rosin is still selling at $9.50 per 280 pounds, southern shipping points.

SALT CAKE.—Offerings of salt cake were rather limited during the past week and prices remain steady to firm. Manufacturers of this product are reported to be well sold ahead. Salt cake is still quoted at from $18 to $19 a ton, in bulk, at works. Chrome salt cake is still in good demand and is selling at from $14 to $15 a ton, in bulk, at works.

SODA ASH.—Contract shipments of soda ash continue to go forward in a satisfactory manner. The market is exhibiting a strong undertone ond prices are holding up to schedule. Contract quotations on soda ash, in car lots, at works, per 100 pounds are as follows: in bulk, $1.20; in bags, $1.32½, and in barrels, $1.57½.

STARCH.—Steadiness continues to prevail in the starch market. Prices remain firm, due to the increases in manufacturing costs since the prevailing schedule was established. The current request for this product is excellent for the season. Special paper makers' starch is still quoted at $3.07 per 100 pounds, in bags, and at $3.24 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—The sulphate of alumina market is in a sound position. Demand is heavy for the season and prices are being maintained at the basis which has prevailed recently. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.45 per 100 pounds. The iron free is selling at from $2 to $2.05 per 100 pounds, bags, at works.

SULPHUR.—Conditions in the sulphur market remain unchanged and the position of this product is very sound. The demand from the paper mills is well sustained and contract withdrawals are moving in a satisfactory manner. Prices are steady to firm. Sulphur is still quoted at from $18 to $19 a ton, in bulk, at mine, on contract orders. The spot quotation is $20 a ton.

TALC.—The talc market maintains the even tenor of its way. Most of the business transacted lately has been along routine lines. Prices remain unaltered and there is little talk of concessions. Quotations on domestic talc range from $16 to $18 a ton, at eastern mines. French talc is still selling at from $18 to $22 a ton, ship side.

CONSTRUCTION NEWS

(*Continued from page 62*)

will be started. H. L. Hardy, Roscoe, Ill., is acting as architect for the work.

Rockland, Que.—The Canadian International Paper Company, Ltd., Beaver Hall Square, Montreal, Que., has preliminary plans under way for the construction of a new saw mill at its timber properties for raw material supply in this section. The plant is estimated to cost in excess of $100,000, with equipment, and will replace a works recently destroyed by fire. The company is a subsidiary of the International Paper Company, New York.

New Companies, Etc.

Jersey City, N. J.—The Lang Company has been incorporated with capital of 20,000 shares of stock, no par value, to manufacture and deal in paper and paper products. The company is represented by the Corporation Trust Company, 15 Exchange Place, Jersey City.

Chicago, Ill.—The Consumers Paper and Supply Company, 117 West Harrison street, recently incorporated with a capital of $60,000, will succeed to and take over the company of the same name at address noted, and will carry out an expansion program. The incorporators include J. Herbert Hedley and Frank D. Byrne.

New York, N. Y.—The Monarch Bag and Paper Company has been incorporated with capital of $10,000, to manufacture and deal in paper stocks, paper bags and kindred products. Jerome Parker, 150 Broadway, New York, is company representative.

New York, N. Y.—New York Blue Print Paper Company has filed notice of increase in capital from $400,000 to $800,000, a portion of the proceeds to be used for expansion.

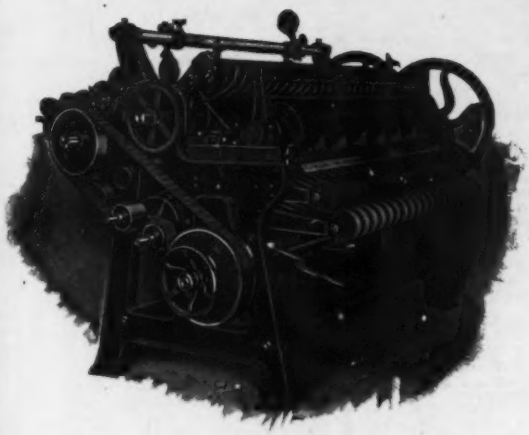
New York, N. Y.—The Haug Machinery Company, care of the United States Corporation Company, 150 Broadway, New York, and Dover, Del., has been incorporated under Delaware laws, with capital of 1,000 shares of stock, no par value, to manufacture paper and cardboard machinery, and also to manufacture and deal in products of such character.

Philadelphia, Pa.—The Duke Card Company, 3751 North Darien street, has filed notice of organization to deal in paper and card stocks. Edward H. Dokenwadel is head.

Spanish River Aerial Survey

Within the next few days over 350,000 acres of pulp wood adjacent to Lake Wahnapitae ond near West Tree will be surveyed from the air by the Spanish River Pulp and Paper Mills. The system of aerial surveys is one only recently introduced in the Sudbury district. A contract has been entered into with the Fairchild Aerial Surveys Company, of Montreal, to do the work for the Spanish River Company.

Paper Cutters
Single, Duplex and Diagonal



CUTTER KNIVES PATENT TOP SLITTER

HAMBLET MACHINE CO.
LAWRENCE MASS.

Clay
3000 tons daily
AMERICAN MADE FOR AMERICAN TRADE

Some portion of our clay production is *pulverized*. That part of it which is *pulverized* is, as far as we know, the only *pulverized clay* which is washed and refined before being pulverized. This insures greater freedom from impurities and an exceedingly uniform product.

Prices of M-E pulverized clay may surprise you even considering this additional treatment.

Let us submit sample and quote you.

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MINER-EDGAR CO.
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For reliable running and average long life

LINDSAY FOURDRINIER WIRES

are unsurpassed

We make them for the largest and fastest machines.

Cylinder Wires All Sizes

The Lindsay Wire Weaving Co.
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H. G. CRAIG & CO.
INCORPORATED

Paper Merchants
(Since 1868)

News
Hanging
Specialties
Mill Supplies

17 East 45th St. NEW YORK, N. Y.

Market Quotations

Quoted by Hepburn & Co., 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	OFFERED
Advance Bag & Paper, 7s 1943	105	107
A. P. W. Pulp & Power, 7s 1945	101	102
American Writing Paper, 6s 1947	79	82
Bastrap Pulp & Paper, 6½s 1940	100	103
British Columbia Pulp & Paper, 6s 1950	85	90*
Beaver Products Corp., 7½s 1942	106	109
Berkshire Hills Paper, 8s 1941	60	80
Brown Paper Co., 1st 5½s 1946	94	98
Bryant Paper Co., 6s 1942	100½	102
Cape Breton Pulp & Paper, 6s 1932	101	103
Central Paper Serial 6, 6½s 1942	89	...
Champion Coated Paper, 6s 1926 to 1932	99	...
Champion Fibre, 8s 1930	100	...
Champion Paper Corp'n, 1st 6s 1945	95	97
Continental Paper Products, 6½s 1943	88	91½
Cornell Wood Prod., 7½s 1937	100	104*
Crown Willamette Paper, 6s 1951	97	101
Donnaconna Paper, 6s 1940	101	102½
Dells Paper & Pulp Serial, 6s 1926-38	*95	...
Eastern Mfg. Co., 7s 1938	89	91
Eddy Paper, 7½s 1931	102	104
Escanaba Paper Serial, 6s 1926-39	94	96
Fiber Fibre Serial, 7s 1926-39	95	...
Fort Orange Paper, 7s 1942	95	100*
Fox River Paper, 7s 1931	99	...
Gair Co. (The Robt.), 7s 1937	104	106
Gilbert Paper Co., 6½s 1926-29	89	...
Hammermill Paper, 6s 1939	100	103*
Hoberg Paper & Fibre, 7s 1937	94½	96
Itaska Paper & Prairie River Power, J+5½s 1926-38	94	96*
Itaska Paper 1st, 6s 1933-38	96	98*
Kalamazoo Veg. Parchment, 6s 1938	98	...
Marinette & Menominee, 7½s 1936	103½	105
Menasha Printing & Carton, 6½s 1939	99½	...
Mengel Company, 7s 1926 to 1934	100*	102
Monroe Paper Products, 7½s 1932	96	...
Munising Paper, 6s 1927-36	96	100
Nekoosa Edwards, 1st Ref. 6s 1928 to 1942	96	99*
Orono Pulp & Paper, 6s 1943	98	...
Orono Pulp & Paper, 5s 1941	94	...
Oswego Falls Corp., 6s 1941	98	100*
Oxford Paper, 6s 1947	104	...
Paepcke Paper Mills, 7s 1930	99	None
Parsons Pulp & Lumber, 7s 1928	97	...
Parker Young Co., 6½s 1944	96½	98½
Paterson Parchment Paper, 6s 1938	100½	102
Penobscot Chemical Fibre, 6s 1942	98	...
Poland Paper, 7s 1930	98	...
Port Alfred Pulp, 6½s 1943	*96	...
Queens City Paper, 7s 1932	95	100*
Richardson Co., 6s 1938	100	...
Spanish River Pulp & Paper, 8s 1941	106	110
Stevens & Thompson Paper, 6s 1942	93	95
St. Anne Paper, 6½s 1946	95½	98*
St. Croix Paper, 5s 1926-37	95	98*
St. Regis Paper Serial, 6½s 1926-35	98½	...
Tait Paper & Color Industries, 6s 1934	90	95
Taggart Bros. Co., 6s 1944	94	97
Ticonderoga Pulp & Paper, 5s 1930	95	98
Ticonderoga Pulp & Paper, 6s 1940	99	101
Warren (The S. D.) Company, 6s 1945	99	101
Wotab Paper, 6½s 1943	102	...
Westfield River Paper, 7s 1926-43	Wanted	...
Whitaker Paper, 7s 1942	106	108
Witmer-Parsons Pulp & Lbr. (Units)	63	70

STOCKS	BID	ASKED
Advance Bag & Paper, 8% Pfd.	97	100*
Am. Tissue Mills, 7% Pfd.	95	100
British Columbia P. & P., Pfd.	65	70
Brompton Pulp & Paper, 8% Pfd.	93	98*
Brown Corpn., 7% Pfd.	97	100*
Champion Fibre, 7% Pfd.	99	103*
Diem & Wing, 7% Cum. Pfd.	87	...
Donnaconna Paper, Com.	58	...
Donnaconna Paper, Pfd.	95	100
Eastern Mfg. Co., 1st Pfd.	34	37
Great Northern Paper (new)	62	65
Hammermill Paper, 7% Pfd.	105	110
Hinde & Dauch, Com.	135	...
Hinde & Dauch, Pfd.	100	...
Holyoke Card & Paper	150	None
Marathon Paper Mills, Com.	125	...
Midwest Box Co., Pfd. 8%	80	85
Midwest Box Co., Pfd. 6%	55	65
Louis De Jonge Co., 7% Pfd.	93	96
Oxford Papers, Com.	170	——
Oxford Paper Co., Pfd.	175	——
Penobscot Chemical Fibre, Com.	65	75*
Richardson Co., 7% Pfd.	104	...
Rubberoid Company	85½	87½
Seaman Container, Class B (par $1)	1	None Off.
Seaman Paper Co.	Wanted	None Off.
St. Croix Paper	150	170
St. Regis Paper Co., 7% Cum. Pfd.	97	100
Westfield River Paper Co., 1st Pfd.	Wanted	None Off.
West Virginia Pulp and Paper, Com.	58	63
West Virginia Pulp and Paper, Pfd.	97	102
Whittaker Paper, 7% Cum. Pfd.	97	103

* Nominal.

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.25	@ —
Rolls, transient	3.25	@ 3.50
Sheets	3.65	@ 3.85
Side Runs	3.00	@ 3.75
Book, Cased—		
S. & S. C.	6.35	@ 7.75
M. F.	6.25	@ 7.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .85
Kraft	.90	@ 1.00
Manila	.75	@ .85
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	5.25	@ 5.50
Southern	4.75	@ 5.25
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	47.50	@50.00
Straw	53.50	@57.50
Chip	45.00	@50.00
Binders' Boards	70.00	@75.00
Sgl. Mla. Ll. Chip.	57.50	@60.00
Wood Pulp	80.00	@85.00
Container	65.00	@70.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	28.00	@30.00
Dry	32.00	@34.00
(F. o. b. Mill)		
No. 1 Domestic	27.00	@30.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.50	@ 4.50
Easy Bleaching	2.85	@ 3.10
No. 1 strong unbleached	2.50	@ 2.75
Mitscherlich unbleached	2.65	@ 3.40
No. 2 strong unbleached	2.40	@ 2.55
No. 1 Kraft	2.70	@ 2.90
No. 2 Kraft	2.50	@ 2.60
Sulphate—		
Bleached	3.75	@ 4.00
(F. o. b. Pulp Mill)		
Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.85	@ 3.05
News Sulphite	2.50	@ 2.70
Mitscherlich	3.25	@ 3.70
Kraft (Domestic)	2.70	@ 3.40
Soda Bleached	3.50	@ 3.75
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.50	@ 1.85

Domestic Rags

New Rags

Prices to Mill f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	11.50	@12.00
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.50	@11.00
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	7.00	@ 7.50
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.50	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.00	@ 5.50
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.75	@ 6.50
Miscellaneous	4.75	@ 5.25
White, No. 2—		
Repacked	3.25	@ 3.75
Miscellaneous	2.75	@ 3.00
St. Soiled, White	2.50	@ 2.75
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.60	@ 1.70
No. 1	1.60	@ 1.70
No. 2	1.35	@ 1.45
No. 3	1.25	@ 1.35
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.75	@ 8.50
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
New Mixed Cuttings	3.00	@ 3.50
New Dark Cuttings	2.75	@ 3.25
No. 1 White Linens	7.00	@ 7.75
No. 2 White Linens	5.25	@ 6.00
No. 3 White Linens	4.00	@ 4.50
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med Light Prints	1.85	@ 2.10
Dutch Blue Cottons	2.25	@ 2.50
German Blue Linens	2.50	@ 2.75
German Blue Cottons	2.00	@ 2.25
Checks and Blues	1.75	@ 2.00
Lindsay Garments	1.75	@ 1.80
Dark Cottons	1.50	@ 1.60
Shoppery	1.50	@ 1.60
French Blues	2.25	@ 2.50

Old Rope and Bagging

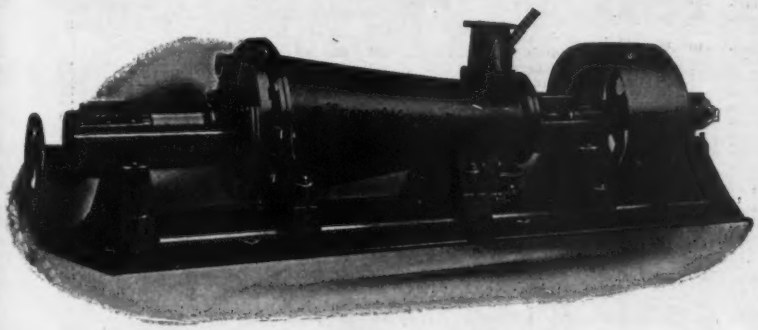
Prices to Mill f. o. b. N. Y.

Gunny No. 1—		
Foreign	1.75	@ 1.85
Domestic	1.80	@ 1.90
Wool Tares, light	1.60	@ 1.70
Wool Tares, heavy	1.60	@ 1.70
Bright Bagging	1.60	@ 1.70
Small Mixed Rope	1.50	@ 1.65
Manila Rope—		
Foreign	3.25	@ 3.75
Domestic	4.25	@ 4.75
New Burlap Cut	3.00	@ 3.25
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.25	@ 3.35
Hard, White, No. 2	2.75	@ 2.90
Soft, White, No. 1	2.75	@ 2.90
Flat Stock—		
Stitchless	1.25	@ 1.35
Overissue Mag.	1.25	@ 1.35
Solid Flat Book	1.15	@ 1.25
Crumpled No. 1	.80	@ .90
Solid Book Ledger	1.90	@ 2.10
Ledger Stock	1.40	@ 1.50
New B. B. Chips	.45	@ .55
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.65	@ .75
Container Board	.50	@ .55
Bogus Wrapper	.70	@ .80
Old Kraft Machine Compressed bales	1.90	@ 2.00
News—		
No. 1 White News	1.55	@ 1.60
Strictly Overissue	.60	@ .70
Strictly Folded	.47½	@ .52½
No. 1 Mixed Paper	.37½	@ .42
Common Paper	.25	@ .30



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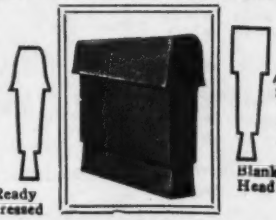

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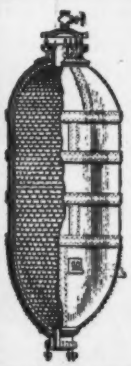

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"Ask Your Neighbor What He Thinks of Them"

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Two-Tower Acid Systems now in operation or building.

Jenssen Spray Type Cooler
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ST. REGIS PAPER COMPANY

Daily Capacity 425 TONS

Newsprint, Catalog
Directory Papers
Butchers Manila
Packers Oiled Manila

General Sales Office

49 Wall St., New York

Farmers' Bank Bldg. Pittsburgh, Pa.

Twines

F. o. b. Mill

Cotton—			
No. 1	.28	@	.29
No. 2	.26	@	.27
No. 3	.24	@	.25
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.20	@	.22
Tube Rope—			
4-ply and larger	.18	@	.19
Fine Tube Yarn—			
5-ply and larger	.23	@	.27
4-ply	.24	@	.28
3-ply	.26	@	.30
Unfinished India—			
Basis	.16	@	.17
Paper Makers Twine			
Balls	.13	@	.15
Box Twine, 2-3 ply	.17	@	.19
Jute Rope	.21	@	.23
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.18	@	.20
No. 2 Basis	.16	@	.18
Sisal Lath Yarn—			
No. 1	.16	@	.18
No. 2	.14	@	.16
Manila Rope	.24	@	.26

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¼
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04¾	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.05¾	@	.06¼
Southern Kraft	.04½	@	.05
No. 2 Kraft	.05	@	.05¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x30 sheet	.07¼	@	.07½
Boards, per ton—			
(Delivered Central Territory—			
Plain Chip	45.00	@	47.50
Solid News	47.50	@	—
Manila Line Chip	55.00	@	57.50
Container Lined—			
(Delivered Central Territory)—			
85 Test	63.00	@	70.00
100 Test	70.00	@	75.00

Old Papers

F. o. b. Chicago

Shavings—			
No. 1 Hard White	2.70	@	2.80
White Env. Cuttings	3.60	@	3.70
No. 1 Soft Shavings	2.30	@	2.40
No. 1 Mixed	1.35	@	1.45
No. 2 Mixed	1.05	@	1.10
Ledger & Writings	1.45	@	1.60
Solid Books	1.20	@	1.30
Blanks	1.30	@	1.40
Kraffs	1.80	@	1.90
New Kraft Cuts	2.25	@	2.35
Manila Envelope Cuttings	2.00	@	2.10
Ex. No. 1 Manila	1.55	@	1.65
Print Manila	.80	@	.90
Folded News (oversisue)	.35	@	.40
Old Newspapers—			
No. 1	.55	@	.60
No. 2	.50	@	.55
Mixed Papers—			
No. 1	.35	@	.40
Roofing Stocks—			
F. o. b. Chicago, net cash			
No. 1	30.00	@	—
No. 2	28.00	@	—

BOSTON

Paper

F. o. b. Mill

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05¾	@	.06½
No. 2 Kraft	.04¾	@	.05¾
Common Bogus	.02	@	.02½
Delivered New England points			
Straw Board, rolls	.009		57.50
Straw Board in Sheets, basis 35s to 70s			53.50
Filled News Board			47.50
Chip Board			45.00
Single Manila Pulp lined board	55.00	@	60.00
Single White, patent coated board bender	75.00	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mills)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers

F. o. b. Boston

Shavings—			
No. 1 Hard White	3.15	@	3.30
White Blank News	1.40	@	1.50
Manila Env. Cuttings	2.00	@	2.25
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	2.85	@	3.00
No. 1 Soft White	2.75	@	3.00
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.00	@	2.25
No. 1 Books, Heavy	1.17½	@	1.30
No. 1 Books, Light	—	@	1.15
Old Kraft	1.75	@	1.90
No. 1 Old Manila	1.40	@	1.60
No. 1 Mixed Paper	.45	@	.50
Print Manila	.70	@	.80
Overissue News	.55	@	.60
Old Newspapers	.45	@	.50
Box Board, Chip	.45	@	.60

Bagging

Price f. o. b. Boston

Gunny No. 1—			
Foreign	1.50	@	1.60
Domestic	1.50	@	1.60
Manila Rope—			
Foreign	3.50	@	3.75
Domestic	4.00	@	4.37½
Mixed Rope	1.05	@	1.15
Scrap burlaps	1.35	@	—
Wool Tares, heavy	1.40	@	1.60
Mixed Strings	.90	@	1.05
New Burlap Cutting	2.15	@	2.35

Domestic Rags (New)

Price f. o. b. Boston

Shirt Cuttings—			
New White No. 1	.11¼	@	.11½
Silesias, No. 1	.07	@	.07½
New Unbleached	.10	@	.10½
Fancy	.05¾	@	.06
Washable	.04½	@	—
Cottons—According to Grades—Blue—			
Blue Overalls	—	@	.07
New Black, soft	.04	@	.04¾
Khaki Cuttings	.05	@	.05½
Corduroy	.03	@	.03½
New Canvas	.09	@	.10

Domestic Rags (Old)

Price f. o. b. Boston

White No. 1—			
Repacked	5.00	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Thirds and Blues—			
Repacked	2.12½	@	2.37½
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.70	@	1.80
No. 2	1.48	@	—
No. 3	1.22½	@	—
No. 4	1.12½	@	—

PHILADELPHIA

Paper

F. o. b. Mill

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06¾	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Label	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila	.09½	@	—
Manila Sul., No. 1	.04½	@	.06
Manila, No. 2	.04	@	.04½
No. 2 Kraft	.05	@	.05¾
No. 1 Kraft	.06	@	.06¾
Common Bogus	.02¾	@	—
Straw Board	60.00	@	65.00
News Board	45.00	@	50.00
Chip Board	40.00	@	42.00
Wood Pulp Board	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
No. 1, per ton	85.00	@	90.00
No. 2, per ton	70.00	@	75.00
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	66.00	@	58.00
Slaters	70.00	@	72.00
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.55	@	1.70
Best Tarred, 3-ply	2.10	@	2.15
No. 1 Mixed Paper	.65	@	.70

Domestic Rags (New)

Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.11½	@	.12
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07½	@	.08
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable	.04	@	.04½
Fancy	.05½	@	.06
Cottons—according to grades—			
Blue Overall	.07½	@	.08
New Blue	.03½	@	.04
New Black Soft	.05½	@	.06
New Light Seconds	.03	@	.03½
Khaki Cuttings	.04½	@	.05
Corduroy	.03	@	.03¾
New Canvas	.08	@	.09
New Black Mixed	.05	@	.05½

Bagging

F. o. b. Phila

Gunny, No. 1—			
Foreign	1.75	@	2.00
Domestic	1.75	@	2.00
Manila Rope	4.25	@	4.50
Sisal Rope	1.25	@	2.00
Mixed Rope	1.25	@	1.50
Scrap Burlaps	1.75	@	2.00
Wool Tares, heavy	2.00	@	2.25
Mixed Strings	1.50	@	1.75
No. 1, New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.25	@	2.50

Old Papers

F. o. b. Phila.

Shavings—			
No. 1 Hard White	3.50	@	3.60
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	2.80	@	2.90
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.90	@	2.00
Writing Paper	1.65	@	1.75
No. 1 Books, heavy	1.15	@	1.20
No. 2 Books, light	.80	@	.85
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	1.00	@	1.10
Container Manila	.75	@	.80
Old Kraft	2.00	@	2.20
Common Paper	.40	@	.50
No. 1 Mixed Paper	.50	@	.60
Straw Board, Chip	.60	@	.65
Binders Board, Chip	.60	@	.65
Overissue News	.75	@	.80
Old Newspaper	.50	@	.60

Domestic Rags (Old)

White, No. 1—			
Repacked	5.00	@	5.25
Miscellaneous	4.75	@	5.00
White, No. 2—			
Repacked	.03½	@	.04
Miscellaneous	.02	@	.02¼
Thirds and Blues—			
Repacked	2.50	@	2.75
Miscellaneous	1.75	@	2.00
Black Stockings	3.25	@	3.50
Roofing Stock—			
No. 1	1.62½	@	—
No. 2	1.37½	@	—
No. 3	1.25	@	1.35
No. 4	1.20	@	1.30
No. 5A	.90	@	1.00
B	.80	@	.90
C	.80	@	.90

TORONTO

Paper

F. o. b. Mill

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (Carloads)	3.25	@	—
Sheet (carload)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.75	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.25	@	—
No. 1 S. C. (carloads)	8.25	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 3 S. C. (carloads)	7.75	@	—
No. 1 Coated and litho	14.50	@	—
No. 2 Coated and litho	13.50	@	—
No. 3 Coated and litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.85	@	—
White Rag	5.25	@	—
"B" Manila	5.65	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.20	@	—
M. G.	7.35	@	—

Pulp

(F. o. b. Mill)

Ground wood	28.00	@	30.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	55.00	@	58.00
Sulphite, bleached	78.00	@	80.00
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

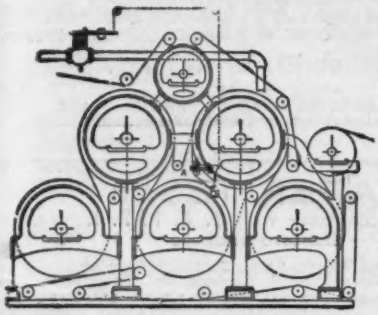
Shavings—			
White Env. Cut	3.20	@	—
Soft White Book Shavings	3.00	@	—
White Blk, News	1.40	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.25	@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.40	@	—
Solid Ledgers	1.40	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.47½	@	.52½
No. 1 Mixed Paper	.37½	@	.42

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.12	@	.12½
Fancy Shirt Cuttings	.06	@	.06½

The Pickles Drying Regulator



WE ARE SAFE IN OUR PROPOSITION

YOU'LL MAKE NO MISTAKE IN ACCEPTING IT

Pickles Drying Regulator

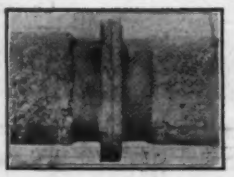
will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

W. F. PICKLES **Buckland, Conn.**

Fawcus Herringbone Gear Reductions

They increase production, save labor and decrease wastage on Calenders. Write for literature. Special Machinery—Couplings—Gears.

FAWCUS MACHINE COMPANY
PITTSBURGH, PA.



Note: Flange Fits Flush. No Metal on Inside.

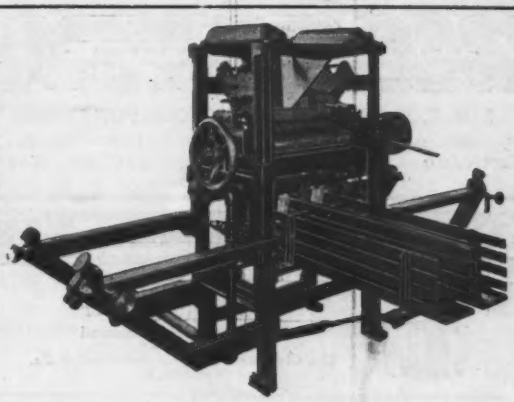
Changing the Piping of an entire Industry

It is true that Michigan Wood Pipe with Collar Flanges as illustrated is revolutionizing the Paper Mill Industry. Up to date Paper Mills are making the change as rapidly as possible. Some are changing entire Plant piping at once while others are changing line by line in order that production will not be held up.

The advantages are long life, no discoloration, power saving, larger capacity, light weight, easy to install, easy to take apart without damage, and cheaper.

Michigan Pipe Company, Bay City, Michigan

DEPENDABLE



DURABLE

ROTARY

NAPKIN FOLDING MACHINES

GUARANTEED PRODUCTION

TOWEL FOLDERS | PRINTING DEVICES | BUNDLING PRESSES

PAPER CONVERTING MACHINE CO.
GREEN BAY, WIS.

HIGHEST SPEED Paper Bag Machinery

Get My Quotations Before Placing Your Orders
Special Machinery Designed and Built

A. L. PARRISH,
1702 Robinson St., South Bend, Ind.

"THE FOURDRINIER THAT TOOK THE IRE OUT OF WIRE"
INTERNATIONAL WIRE WORKS
Menasha, Wisconsin

ANALYSES *and* TESTS *of*
PAPER, PULP AND PAPER-MAKING MATERIALS
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OFFICIAL PULP SAMPLING AND TESTING
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Analytical Department
30 CHARLES RIVER ROAD, CAMBRIDGE, MASS.

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PAPER TESTS
In Accordance with T. A. P. P. I. Standard Methods
Oils — Paper — Water — Microphotograph
Electrical, Mechanical, Physical, Chemical and Photometric Tests
ELECTRICAL TESTING LABORATORIES
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HEATING—VENTILATING—DRYING
J. O. ROSS ENGINEERING CORPORATION
208 W. Washington St., CHICAGO
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ERIE CITY 3-drum BOILER
ERIE CITY IRON WORKS
Erie, Penna.

CLEVELAND TRAMRAIL SYSTEMS

The Modern Way of Handling Paper
Cleveland Electric Tramrail
Division of
The Cleveland Crane & Engineering Co.
Wickliffe, O.

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INDUSTRIAL ENGINEERS
Specializing in
Waste Elimination and Labor Cost Reduction
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Our Worm Gear Speed Reducers represent the most advanced engineering and the highest type of precision manufacture. Used in many basic industries. Write for Bulletin 251—of interest to you.
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are good wires
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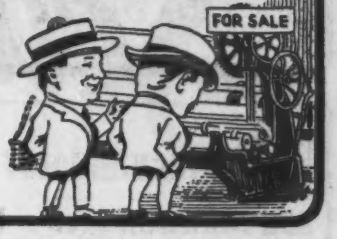
HAYTON PUMP and BLOWER CO.
APPLETON, WIS.
Centrifugal and Triplex Pumps
For All Purposes
Designing Pumps to Fit All Conditions Our Specialty

Bristol's Recording Instruments
For Pressure, Vacuum, Temperature, Liquid Level, Humidity, Speed, Electric Units, etc.
The Bristol Company Waterbury, Connecticut
BRISTOL'S

Pulp Type AMERICAN CONTINUOUS FILTERS
Used As
Groundwood Deckers or Thickeners Sulphite Deckers or Thickeners
White Water Save Alls Combined Sulphite Deckers and Save Alls
Combined Bleach Washers, Deckers and Save Alls
UNITED FILTERS CORPORATION
Hazleton, Pa.

BELLE ALKALI COMPANY, BELLE, W. VA.
DELETO LIQUID CHLORINE
Cylinders—Ton Tanks—Tank Cars
BELLE BRAND
Arnold, Hoffman & Co. Inc. Sole Agents
CAUSTIC SODA
76%—Solid Liquid Flake
PROVIDENCE BOSTON NEW YORK
PHILADELPHIA CHARLOTTE

The CLEARING HOUSE of The Paper Industry



PAPER TRADE JOURNAL
10 East 39th Street New York, N. Y.
Telephone Caledonia 0560

"SITUATION WANTED" ADVERTISEMENTS—4c a word, double rates for heavy face type. Minimum charge $1.00. If repeated ½ rate will be charged for each consecutive repetition.

"HELP WANTED" ADVERTISEMENTS—4c a word, double rates for heavy face type. Minimum charge $1.00.

CLASSIFIED ADVERTISEMENTS—4c a word, double rate for heavy face type. Minimum charge $1.00.
All classified, "Help Wanted" and "Situation Wanted" advertisements are payable in advance.

HELP WANTED

SALESMAN WANTED for New York and vicinity to handle special lined board. Commission basis. Excellent opportunity. Address, Box 27-423, care Paper Trade Journal. Jl-28

WANTED—Experienced machine tender for container board mill; mill working two tours; wages 80c per hour. In answering state age and experience; references required. Address, Box 27-248, care Paper Trade Journal. A-11

MACHINE TENDERS WANTED for binders board machines—at once. Good wages. Northland Paper & Fibre Co., Winona, Minnesota. Jl-28

IF YOU are open to overtures for new connection, and qualified for a salary between $2,500 and $25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standing and reputation, through which preliminaries are negotiated confidentially for positions of the calibre indicated. The procedure is individualized to each client's personal requirements; your identity covered and present position protected. Established sixteen years. Send only name and address for details. R. W. Bixby, Inc., 117 Downtown Building, Buffalo, New York. tf.

SUPERINTENDENTS, EXECUTIVES, ENGINEERS, $3,000-$25,000, find our individual confidential service effective in making new connections. Personally planned by Jacob Penn, the eminent employment authority, known to all paper mill owners. Not agency. Jacob Penn, Incorporated, 816 Parkmurray Building, New York. tf.

WE REQUIRE Superintendent and two Assistant Superintendents for present and new mills. Must have experience in groundwood pulp and good mechanical knowledge. Address, Box 27-414, care Paper Trade Journal. A-4

BACK TENDER for high speed Cylinder paper machine. Apply Robert Gair Company, Piermont, New York. Attention: Mr. Harry F. Cassidy. A-4

WANTED—Tour Boss for three machine mill, both fourdrinier and cylinder. Must be experienced in the manufacture of both unbleached and bleached papers. In reply give age, previous experience and references. Address, Box 27-398, care Paper Trade Journal. Jl-28

WANTED—Young man not over 30 years old technically educated in pulp and paper making to assist in superintendent's office. Knowledge of cost work would be desirable. Reply, give age, previous experience and reference. Address, Box 27-399, care Paper Trade Journal. Jl-28

WANTED—Machine Tender and Beater Room Boss for two machine board mill in northern Wisconsin. Previous experience and A No. 1 reference required. Address, Box 27-415, care Paper Trade Journal. A-4

WANTED—Experienced pulp salesman by an old established house. One who is acquainted with buyers and users of foreign pulps. Address, Box 27-430, care Paper Trade Journal. Jl-28

SITUATIONS WANTED

A CHEMICAL ENGINEER with successful record in operation, engineering, development, sales service, and management, desires to make a permanent connection with a company whose management is sold on a thorough development program over a period of years, based on sound technical fundamentals. Such a program properly executed is the only sure guarantee of future earnings. Address, Box 27-380, care Paper Trade Journal. Jl-28

PAPER MILL SUPERINTENDENT—Trained on M. F. and M. G. Kraft and Sulphite papers, over various grades. Best of references. Address, Box 27-393, care Paper Trade Journal. S-8

GROUND WOOD FOREMAN and Millwright open for position. Best of references. Familiar with electrical equipment. Address, Box 27-346, care Paper Trade Journal. A-11

SUPERINTENDENT now employed wants new connection. Well up on Specialties on both Fourdrinier and Cylinder machines, covers, and absorbent papers. Expert on colors. Knows requirements of many converters. Address, Box 27-410, care Paper Trade Journal. Jl-28

POSITION WANTED—Working master mechanic with seventeen years experience. Good machinist and draftsman. Can lay out work to get results and figure costs to save money. Now employed. References. Address, Box 27-412, care Paper Trade Journal. Jl-28

ADJUSTER on Flat and Square and sack machines wishes position. Address, Box 27-397, care Paper Trade Journal. Jl-28

PAPER SALESMAN with twelve years experience seeking position as Chicago representative for manufacturer of fine papers. Address, Box 27-352, care Paper Trade Journal. tf.

ASSISTANT SUPERINTENDENT—College graduate, chemist, nine years practical experience and research in rag fine writing papermaking and specialties, desires position with opportunity for advancement. Address, Box 27-320, care Paper Trade Journal. tf.

CYLINDER MACHINE TENDER—Good on any grade of stock. Will go anywhere. Address, Box 27-404, care Paper Trade Journal. Jl-28

STEADY, reliable man available at once as night superintendent, tour boss or machine tender, with chance to advance. All grades box, test and container board. Address, Box 27-417, care Paper Trade Journal. Jl-28

SUPERINTENDENT—Small board or wrapping mill. Experienced, reliable, competent to get tonnage and quality. Wages secondary consideration. Married. Reference. Address, Box 27-434, care Paper Trade Journal. A-4

SULPHITE SUPERINTENDENT—Now in charge of 60 ton mill, desires change. Well up on all grades of sulphite. Expert in bleaching. Age 32. 15 years experience. I get results. Address, Box 27-432, care Paper Trade Journal. Jl-28

SITUATIONS WANTED

POSITION as machine tender or tour boss. Thoroughly experienced on all grades boards, bag and wrapping. References. Married. Address, Box 27-431, care Paper Trade Journal. A-4

POSITION WANTED—Superintendent or foreman; chip board or wrapper mill. Experienced at construction and remodeling. Eastern states preferred. Address, Box 27-382, care Paper Trade Journal. A-4

SUPERINTENDENT desires change, age 28, married, eleven years experience on box board, chip, and high grade specialties. At present employed as Superintendent in eastern plant. Have business possibility in new line for right concern. Address, Box 27-420, care Paper Trade Journal. A-4

WANTED—Position as manager or superintendent of mill making binders, leather and other boards. Middle-aged man. Good at construction and repairs. Address, Box 27-381, care Paper Trade Journal. A-4

PAPER MAKER—Expert ability, wants to connect with capital, to manufacture product that will pay large dividends. Reference exchanged. Address, Box 27-421, care Paper Trade Journal. A-4

SUPERINTENDENT—Or job where advancement is assured. Fast board jobs, .009 straw, dry felt. 33 years old, hustler. Come at once. Address, Box 27-422, care Paper Trade Journal. Jl-28

POSITION WANTED—Pulp and paper mill engineer with ten years experience on maintenance, improvements and extensions, desires new connection. Best of references. Address, Box 27-418, care Paper Trade Journal. A-4

SUPERINTENDENT OR ASSISTANT—Energetic man, 33, married. Familiar with cylinder and Fourdrinier specialties, Kraft, bag, envelope, offset, manilas, bonds. Well up on colors. Technical training. Now employed, desires to change. References. Address, Box 27-429, care Paper Trade Journal. A-11

ACCOUNTANT—Wide experience in paper mills and power plants. Available at once. Go anywhere. Address, Box 27-426, care Paper Trade Journal. Jl-28

WANTED

WANTED—2 W. & P. Pulpers, 2 Filter Presses and 1 Rogers Wet Machine. Address, Box 27-285, care Paper Trade Journal. tf.

WANTED—One Hamblet Sheeter, 50 inches wide with six roll stand. Give model and full particulars. Mid-States Gummed Paper Co., 2433 South Robey Street, Chicago, Ill. A-4

WOULD PURCHASE from a private firm a used cutting machine of standard manufacture, 48" to 60" wide. Goldman Paper & Paper Stock Co., 414 So. Front Street, Philadelphia, Pa. tf.

Scan the Roster!

65

Mills that Use Shartle Breakers

or have them on order

Take note of the prominence of the mills that use Shartle Breakers rather than of the length of the list itself. Pay particular attention to mill types—mills that make a product like or similar to your own.

Select a few such mills and write them. Get their confidential opinion of the true worth to them of the Shartle Breaker. Then write us for detailed information.

Remember—no other make has ever successfully displaced a Shartle, while Shartles, on the other hand, have replaced one or several installations of every other well-known make—all of which gives the Shartle Breaker undisputed leadership.

National Paper Products Co.	Stockton, Cal.
Eddy Paper Corp.	Three Rivers, Mich.
Western Board & Paper Co.	Kalamazoo, Mich.
Container Corp. of America	Cincinnati, Ohio
Robert Gair Co.	Haverhill, Mass.
Robert Gair Co.	Piermont, N. Y.
Robert Gair Co.	Montville, Conn.
Continental Paper Co.	Bogota, N. J.
Lawless Brothers Paper Mills	Rochester, N. Y
Smeallie & Voorhees	Amsterdam, N. Y.
Downington Paper Co.	East Downingtown, Pa.
Consolidated Paper Co.	Monroe, Mich.
American Box Board Co.	Grand Rapids, Mich.
Ohio Box Board Co.	Rittman, Ohio
Bird & Son, Inc.	East Walpole, Mass.
E. Austin Bicking Paper Co.	East Downingtown, Pa.
Hinde & Dauch Paper Co.	Gloucester, N. J.
Hinde & Dauch Paper Co.	Watertown, N. Y.
J. R. Booth	Ottawa, Ontario
Auglaize Box Board Co.	St. Marys, Ohio
Philadelphia Fibre Box Board Co.	Philadelphia, Pa.
United States Gypsum Co.	Gypsum, Ohio
United States Gypsum Co.	Lancaster, Ohio
United States Gypsum Co.	Oakfield, N. Y.
The Richardson Co.	Lockland, Ohio
Ball Brothers Co.	Muncie, Ind.
Halltown Paper Board Co.	Halltown, W. Va.
Waldorf Paper Products Co.	St. Paul, Minn.
Bogalusa Paper Co.	Bogalusa, La.
Hollingsworth & Whitney	Waterville, Maine
Cincinnati Paperboard Co.	Crescentville, Ohio
Lafayette Box Board Co.	Lafayette, Ind.
Paper Board Corp.	Tonawanda, N. Y.
Bryant Paper Co.	Kalamazoo, Mich.
Bogota Paper & Board Co.	Bogota, N. J.
The Brown Paper Mill Co., Inc.	Monroe, La.
McEwan Brothers	Whippany, N. J.
New Haven Pulp & Board Co.	New Haven, Conn.
Kieckhefer Container Co.	Delair, N. J.
North Star Straw Board Mills	Quincy, Ill.
Philadelphia Paper Mfg. Co.	Philadelphia, Pa.
Franklin Board & Paper Co.	Franklin, Ohio
Standard Paper Co.	Kalamazoo, Mich.
R. B. McEwan and Sons Co.	Whippany, N. J.
Celotex Co.	Marrero, La.
Fox Paper Company	Lockland, Ohio
Genesee Paper Mills	Scottsville, N. Y.
Alton Boxboard Co.	Alton, Ill.
Emerson Carey Fibre Products Co.	Hutchinson, Kans.
Chesapeake Corp.	West Point, Va.
Thames Board Mills, Ltd.	Purfleet, Essex, England
Midwest Box Company	Circleville, Ohio
Pynetree Paper Company	Gordon, Ga.
Hammermill Paper Co.	Erie, Pa.
Abitibi Power & Paper Co., Ltd.	Iroquois Falls, Ont.
A. P. W. Paper Company	Albany, N. Y.
Tennessee Paper Mills	Chattanooga, Tenn.
Newark Boxboard Co.	Newark, N. J.
Mount Vernon Straw Board Co.	Mt. Vernon, Ind.
United States Gypsum Co.	Kansas City, Mo.
Great Northern Paper Co.	Millinocket, Maine
Compania Papelera Nacional	Havana, Cuba
Manchester Board & Paper Co.	Richmond, Va.
Oxford Miami Paper Co.	West Carrollton, Ohio

Shartle Brothers Machine Co.
Middletown, Ohio

SHARTLE BROTHERS

DIVISION OF THE BLACK-CLAWSON COMPANY

Shartle SHARTLE **Breakers**

WANTED

WANTED—One 52 inch Super Calender—5 stack in good condition. Address, Box 27-395, care Paper Trade Journal. A-4

MISCELLANEOUS

CLARK MANUFACTURING COMPANY, Holyoke, Mass. Telephone 1828. Builders of cylinder moulds, couch and felt rolls, dandy rolls. We cover dandies and cylinders tight, for fast running machines. 3-5-27

WANTED—We are interested in job lots of paper of any kind, large or small quantities. Submit samples and price. Ireland & Taub Paper Co., Inc., 121 Sullivan Street, New York. tf

TO PAPER MILLS PURCHASING PULP. If you are interested in securing a steady supply of pulp at a low price and will join us in the building of a mill on a site we own, having deep water and rail connections, where pulp wood can be secured for $2.00 per cord delivered at mill, and the best water, by actual test, for paper making in abundance, will be pleased to hear from you and to send you our proposition which we know will interest you. Address, Box 27-411, care Paper Trade Journal. A-11

FOR SALE

FOR SALE—Second-hand 1200 lb. wood tub N. & W. beater. In good condition. The Noble & Wood Machine Co., Hoosick Falls, N. Y tf.

FOR SALE—6 Used Jones Imperial Jordans, with bronze or steel fillings. Will sell "as is" or factory rebuilt. THE NOBLE & WOOD MACHINE CO., Hoosick Falls, N. Y. tf.

FOR SALE—Best pulp and paper mill site on Columbia River, Oregon. Situated in center of log production. Abundant water. 60,000 ft. capacity saw mill. Rail and water shipping facilities. Will sell at bargain or will exchange for stock in properly financed mill. Address, Box 27-390, care Paper Trade Journal. A-4

FOR SALE—Dietz roll feed tube machine. Makes tubes four to twelve inches wide. Address, Box 27-427, care Paper Trade Journal. Jl-28

Classified Advertising Brings Results

FOR SALE
BOARD MILL EQUIPMENT

3—800 lb. Downingtown Beaters.
2—70" Downingtown Wet Machines.
1—48" Stack Board Calenders.
1—36" Stack Board Calenders.
1—120 Ton Screw Press.
1—65" Ream Cutter.
250 H.P. and 150 H.P. Engines.

Address, Box 27-270, care Paper Trade Journal.

FOR SALE

Alvey Vertical Conveyor extending from 1st to 3rd floor, hand loading and gravity discharge stations on 1st, 2nd and 3rd floors. Carriers spaced 10 Ft. centers.

Address, Box 27-425, care Paper Trade Journal. Jl-28

FOR SALE

FOR SALE

1—72" Model 10 Cameron.

11—Dryers 48" x 110".

60" trim Black-Clawson Fourdrinier machine.

Several White cedar stuff chests, A-1 shape.

1—48"—3 cylinder machine.

1—70"—2 cylinder machine.

Several Chippers.

Four deck Beloit frames. These are modern and extra heavy.

One Ryther & Pringle Multiple Saw Slasher. Will cut 32'.

One Farrel Roll Grinder.

One No. 2 Lannoye Pulper.

One 61" Holyoke Super-Calender

The Shartle Brothers Machine Company

Middletown, Ohio tf.

Grinders, Four Pocket with Synchronous Motor

2—4 pocket grinders direct connected to synchronous motor, 2300 volt, 3 phase, 60 cycle, with extra shafting and stone.

TECHNICAL ECONOMIST CORPORATION

40 RECTOR STREET
NEW YORK, N. Y.
Telephone Whitehall 5243
Cable Herenco

FOR SALE

2—Iron tub Beaters, practically new. Rolls 70 x 66. Made by Emerson Mfg. Co.

1—Wood tub Beater, practically new. Roll 70 x 66. Made by Emerson Mfg. Co.

2—Dilts Beaters, iron tubs. Rolls 54 x 62. A-1 shape.

1—New Dilts iron tub Beater, roll 50 x 44.

4—Jones Washers. Iron tubs. Rolls 67 x 60. Good shape.

1—Dayton Beater and Hoist Iron tub Beater. A-1. Rolls 64" diameter, 54" face.

1—Breaker Roll 64" diameter by 54" face.

1—Downingtown Iron tub Beater with Brownell Buehler perforated back fall. Rebuilt for immediate shipment. Roll 44" x 44".

The Shartle Brothers Machine Co.

Middletown, Ohio tf

FOR SALE

HEADQUARTERS
For Good Used Machinery

ROTARY DRYERS AND KILNS
6—4' x 30' American Process.
2—6' x 60'.
1—6' x 100'.
1—8' x 125'.

PULPER MIXERS
1—W. & P. size 17-200 gals.
Also several smaller sizes.

TUBE AND ROD MILLS
1—3' 6" x 12' Allis Chalmers.
1—4' x 16' Schmidt.
6—5' x 22' Allis Chalmers.
1—5' 6" x 22' Schmidt.
1—6' x 22' Gates.

SULPHUR BURNERS
1—3' x 8' Glens Falls.
4—4' x 16' Glens Falls.
4—4' x 20' Glens Falls.

EVAPORATORS
1—Stokes Triple Effect, 1,000 sq. ft.
1—Scott Triple Effect, 1,350 sq. ft.
1—Swenson Triple Effect, 1,750 sq. ft.
2—Swenson Triple Effect, 2,300 sq. ft.

ROTARY FILTERS
2—6' x 4' Oliver.
2—6' x 6' Oliver.
3—6' x 6' Oliver, Acid Proof.
1—6' x 3' Oliver, Acid Proof.

SEND US YOUR INQUIRIES
WE BUY YOUR IDLE EQUIPMENT

CONSOLIDATED PRODUCTS COMPANY, INC.
15 PARK ROW NEW YORK, N. Y.
Barclay 0603

PAPER MACHINES
For Sale

In good condition. Immediate delivery.

One 2 cylinder machine. 2 presses; 10 dryers 42" x 84"; one calender; reel; single drum winder; Marshall drive.

One Fourdrinier machine. Wire 96" x 50'. 2 presses; 15 dryers 48" x 94"; one calender; reel; two drum winder; Marshall drive.

By: FRANK H. DAVIS COMPANY
175 Richdale Avenue Cambridge, Mass.

FOR SALE

1—72" Hamblet Single Cutter with 24 roll back stand.
1—84" Beloit heavy duty duplex.
1—84" Black-Clawson heavy duty duplex, with duplex slitter.
1—52" Moore & White Cutter with Moore & White Layboy and Backstands.
1—48" Moore & White Cutter with Moore & White Layboy and Backstands.
1—42" Moore & White Cutter with Moore & White Layboy and Backstands.
1—60" Hamblet Cutter with 10 roll Backstands.
1—110" Moore & White Cutter with Moore & White Layboy and Backstands.
1—82" Heavy duty Hamblet Single Cutter with 24 roll Backstands.
2—58" Moore & White Single Cutters.
4—54" Moore & White Single Cutters.
6—48" Moore & White Single Cutters.
1—57" Hamblet Duplex Cutter, Heavy Duty.

The Shartle Brothers Machine Co.,

Middletown, Ohio tf.

Receiver's Sale

Paper Mill and Equipment

By authority of an Order of the Court of Common Pleas of Lawrence County, Pennsylvania, at No. 1, June Term, 1927, in Equity, I will offer at public sale on the premises, on Thursday, August 4, 1927, at 1 o'clock P. M., Eastern Standard Time:

All that certain piece or parcel of land situated partly in the Second Ward and partly in the Third Ward of the city of New Castle, in Lawrence County, Pennsylvania, containing thirty and eighty-nine hundredths (30.89) acres of land together with all the water rights of Newcastle Paper Products Corporation in the Neshannock Creek, including dam, races and other riparian rights, and being the same premises conveyed to Newcastle Paper Products Corporation by New Castle Paper Mills Company, a corporation, by deed dated October 24, 1925, and of record in the Recorder's Office of Lawrence County in Deed Book Vol. 158, page 157.

Erected on said land is the main factory building of stone and frame construction, a frame warehouse, a frame scale house and a frame house used as a dwelling house and an office and other buildings.

Among the equipment of this plant is a water power, Erie City Steam Boiler and Engine, and two complete paper making units, including one standard two cylinder type of paper making machine of a capacity of about eight tons per day and one special type machine designed for the manufacture of cellucotton of the capacity of about two tons per day, together with trimmers, cutters, engines and other equipment, and all stock, fixtures and equipment on the premises belonging to the Newcastle Paper Products Corporation except certain cellucotton stored in the warehouse on said premises north of the mill building, excepting and reserving the possession of said warehouse pending the final determination of the ownership of the cellucotton stored therein or the further order and direction of said Court.

The terms of said sale are ten (10) per cent in cash on day of sale and the balance in cash on confirmation of said sale by said Court and the delivery of deed in consummation thereof.

JOHN P. LOCKHART,

Receiver for Newcastle Paper Products Corporation.

WILLIAM McELWEE, JR.,
601 L. S. & T. Bldg.,
New Castle, Pa.,
Attorney for Receiver.

WANTED

A Mill or a Man Qualified to Produce Coated Label and Box Board.

To such a mill we offer a sales volume that will utilize a large portion or the entire output of its coated stock.

To such a man we offer an opportunity to organize and direct a mill of his own. Naturally—he must have a thorough knowledge of paper making and mill management.

If you qualify for either of the above we welcome your inquiry. Please write fully of your ability to fulfill the requirements. It will be held in confidence—of course.

Address, Box 27-424, care Paper Trade Journal. J1-28

Many Times Some Little Classified Advertisement Placed in These Columns Usually Brings Some Very Satisfactory Results

New Hydraulic Presses

2—Dunning and Boshert 600 tons Hydraulic Presses, 42" x 18", including one large and one small D. & B. Triplex pumps, complete with high pressure pipe, accumulator and fittings.

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WANTED POSITION—Boss Beaterman or Beater Engineer. Family man, 37 years old. Experienced on most all grades. Good on colors. Address, Box 27-419, care Paper Trade Journal. A-4

WANTED

WANTED—A paper mill in the East or Middle West, to lease or buy. One suitable for making box or container board. State price and particulars with reply. Quick attention desired. Address, Box 27-435, care Paper Trade Journal. J1-28

Liquidating and Disposing of the Machinery and Equipment of the Pine Tree Pulp Co.

2—Dunning & Boschert 600 ton Hydraulic Presses 42" x 18", including one large and one small D. & B. Triplex pumps complete with high pressure pipe, accumulator and fittings.
2—94" Union Iron Works single press, having 36" dia., 96" face cylinder moulds.
1—72" single press, 36" dia., 74" face cylinder mould.
2—4 pocket pulp grinders, 60" x 28" stone, Union Iron Works.
1—Synchronous Motor, 1200 H.P., 240 R.P.M., W. E. & M. (22), 2200 V., 60 cy., 3 ph., control panel 73B923.
1—D.C. generator, 18 KW., 100 R.P.M., 125 V., S. K. & M.
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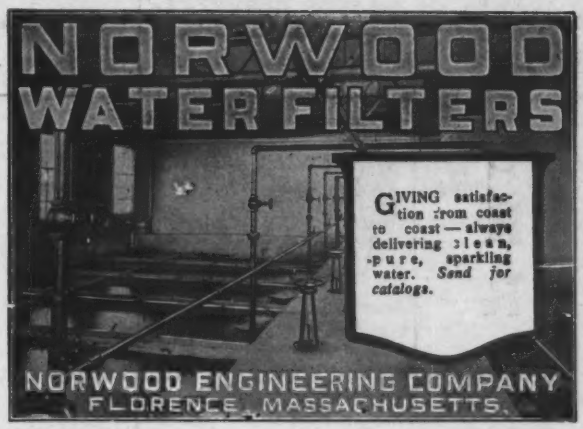
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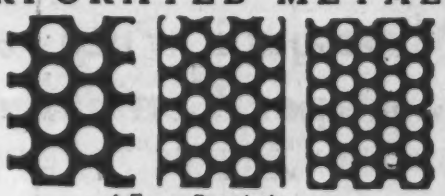

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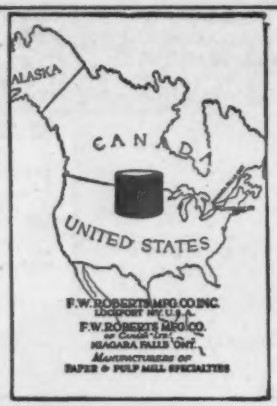

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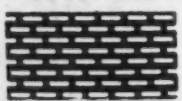

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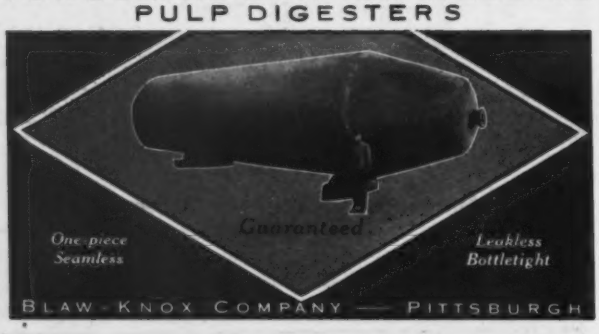

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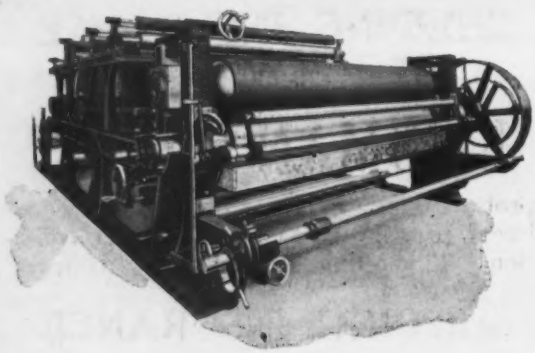

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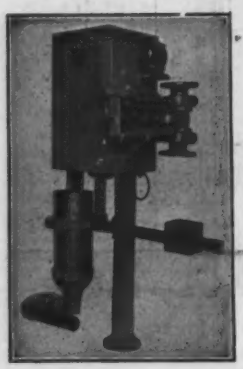

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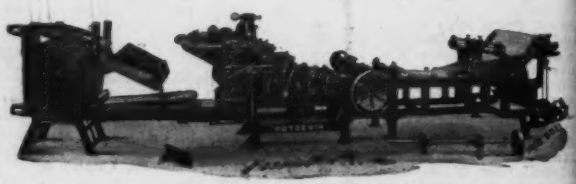

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